KEWANEE

Catalog 81

FIREBOX BOILERS

A. I. A. File No. 30C

KEWANEE
FIREBOX BOILERS

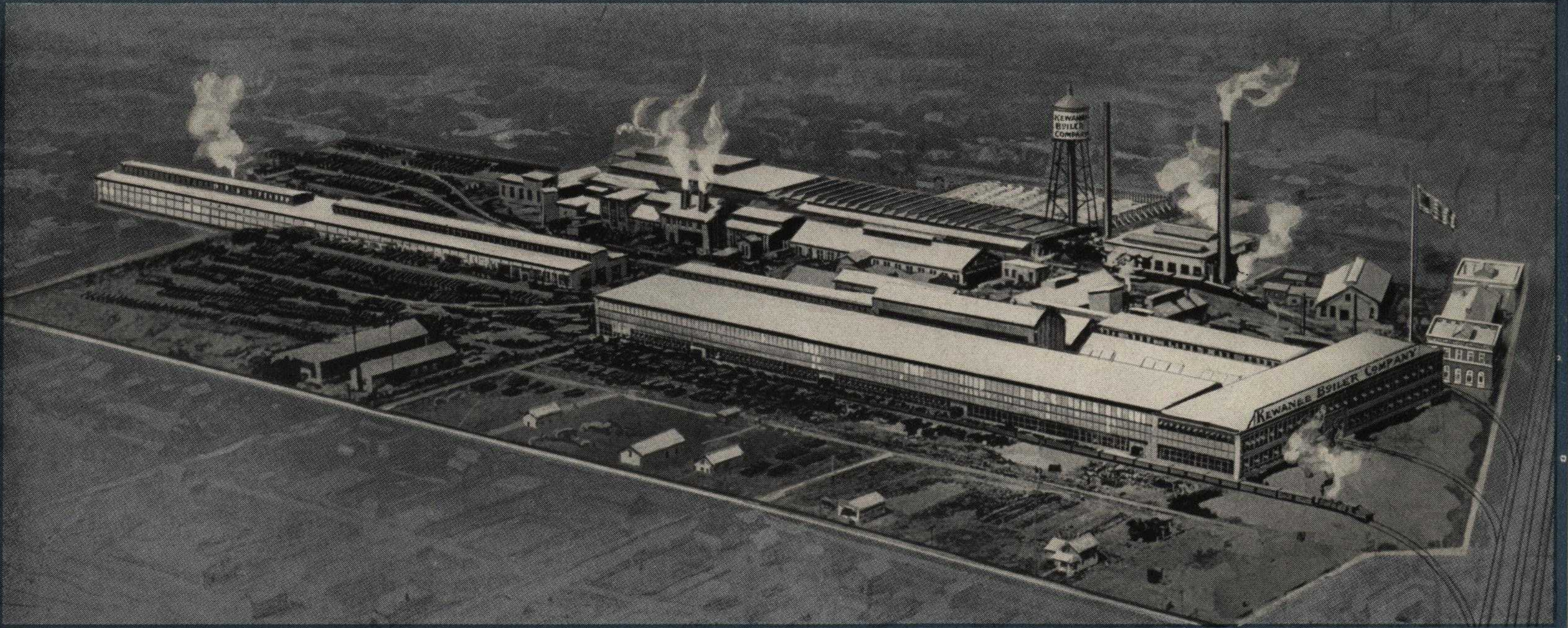
Catalog No. 81

Reprint No. 1
Supersedes Catalog No. 78

Separate Catalogs on
Kewanee Steel Water Heating Garbage Burners,
Tabasco Water Heaters and Tanks, Kewanee Power
Boilers and Kewanee Radiators, Sent on Request

KEWANEE BOILER COMPANY
KEWANEE, ILLINOIS

Branches in all Principal Cities of the
U. S. and Canada (See page 52)



The Home of Kewanee Steel Riveted Firebox Boilers, covering 33 acres of ground, 11 acres of buildings

KEWANEE BOILER COMPANY

KEWANEE, ILLINOIS, U. S. A.

All KEWANEE *Boilers Are Built of Steel*

KEWANEE Boilers are built of steel plates firmly riveted together. This practice is accorded universal recognition as the best that is known today; first of all, because considerations of safety demand the actual strength of all the sides and of every inch of the seams be known definitely; then because the quality of workmanship is more easily checked up in riveted joints and imperfections may be detected by inspection; and in addition, the property investment is enhanced in value through expectancy of increased life for steel-riveted heating equipment.

Rules for safe and sound boiler construction adopted by the American Society of Mechanical Engineers comprise the A. S. M. E. Boiler Code. Every KEWANEE Boiler bears the official stamp or symbol showing the working pressure permitted by this code, together with the official stamp of the manufacturer. Each latest ruling issued by the A. S. M. E. Boiler Code Committee is fully complied with but is used by KEWANEE only as a minimum limit. In all particulars our boilers are above code requirements; based on forty years' experience of what is required to make a boiler give long and satisfactory service most economically.

Embodied in the design and construction of KEWANEE Boilers are these features, resulting from the application of modern engineering knowledge and research:—— the highest grade materials; substantial riveted joints; heavy stays and braces for flat surfaces; spacious fire-boxes for the best combustion of any fuel; together with enough tubes of sufficient size and length to handle all the flue gases effectively, and these tubes are so arranged in relation to each other and to the boiler shell as to allow free circulation of water; also there is proportionate heating surface and grate area; ample steam space to insure dry steam and a water content sufficient to hold the water line steady.

Handhole and manhole plates are provided for cleaning and inspection; in fact, every condition and advantage for the safe and economical operation of and for the care of a high-grade steam generator is exemplified in the KEWANEE Steel-riveted Firebox Boiler.

Kewanee *Boilers Are Honestly Rated*

The rated capacity of Kewanee Boilers, as printed in this book, is the number of square feet of direct cast-iron radiating surface or equivalent, in addition to mains and risers, which the boilers will carry, if sufficient radiation is installed to heat the building to a temperature of 70 degrees Fahrenheit.

The ratings are based on a standard steam pressure of two pounds at the boiler, and for water on a mean temperature of 180 degrees Fahrenheit as the water leaves the boiler.

Equipment

The list price on all brick-set boilers includes Century rocking grates, fire-door and frame, ash-pit front with ash door and draft doors, the necessary soot doors, bearing plates with expansion rollers for supporting boilers upon brick pier at rear of boiler shell. Firing tools include hoe, poker, slice bar, and tube scraper.

With all Kewanee Smokeless Boilers, brick-set type, rear flue clean-out doors are furnished and we include extra clean-out doors and frames for side or rear walls.

Back arch bars and manhole shield are furnished with all brick-set boilers. Special fire-brick tile, to fit header, is furnished with all smokeless boilers. With portable type boilers we furnish all castings for erecting the boilers as illustrated on pages 16, 17, 24, 25, 36, 37, 44 and 45, including cast-iron ash-pit base for the smaller sizes.

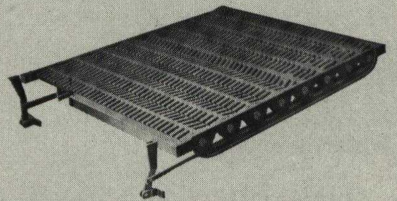
The trimmings for steam boilers are listed separately, consisting of water column with water gauge and three compression gauge cocks; steam gauge with syphon and cock; pop safety valve; and Kewanee Automatic Sylphon Draft Regulator with lever, weights, pulleys, chains, and angle valve.

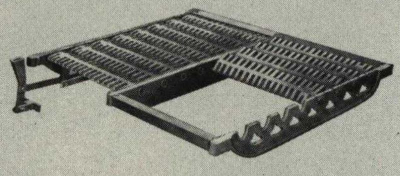
No trimmings of any kind are furnished with water boilers.

Sufficient handholes are provided for cleaning purposes, and in brick-set boilers 42 inches in diameter and larger, and in portable boilers 54 inches and larger, manholes are included.

The Century Rocking Grate

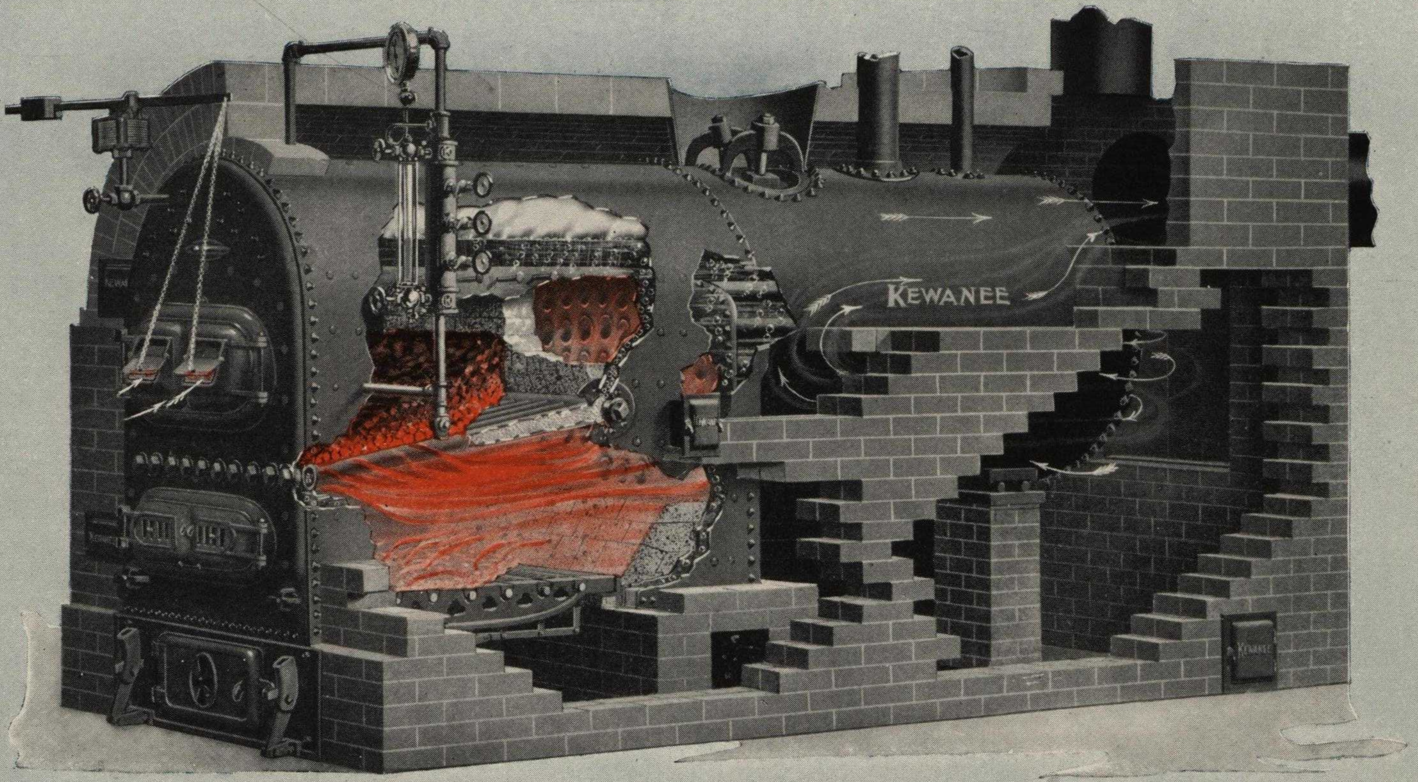
The Century Rocking Grate is furnished with all Kewanee Boilers. It is made of the best selected iron, is heavy, strong, and durable, and has 55 percent air space, which makes it most efficient.





The style of grate shown at the left is furnished with boilers sizes 12, 112, 412, 312, and smaller. In those having a fire-box longer than 38 inches, the front half of the grate operates independently of the rear half.

The two-section grate shown at the right is furnished with boilers sizes 13 and larger; sizes 113 and larger in the brick-set smokeless; sizes 413 and larger in the straight-draft portable; and sizes 313 and larger in the smokeless portable. Each section is operated independently.



KEWANEE SMOKELESS BOILER

Brick-set Down-Draft Type

Numbers 104 to 120

For heating 1600 to 16,000 sq. ft. radiation

Used wherever soft coal must be burned smokelessly. Has low water line. Flues clean from rear. Front or rear stack outlet. Brick for setting usually available from building construction.

SECTIONAL view shows arrangement of double grates and long travel of gases, permitting any fuel to be burned economically. Recent tests of KEWANEE Smokeless Boilers, made by recognized boiler authorities, prove that under conditions similar to those prevailing in most large buildings, when burning soft coal their efficiency ranges from 73 to 81 percent and reaches 84 percent when burning oil. The ordinary type heating boilers average about 60 percent efficiency.

KEWANEE SMOKELESS BOILER Specifications—Brick-set Type

These Boilers will heat all the radiation shown by their capacity

Built much stronger than the A. S. M. E. Boiler Code requires

Number of Boiler		104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
Code, Steam Boiler		Heal	Heap	Hear	Heck	Heed	Help	Hern	Hen	Henna	Herd	Herf	Herp	Herg	Hero	Herod	Heron	Hery
Code, Water Boiler		Hide	Hie	Hill	Hind	Hinge	Hint	Hip	Hire	Hisk	Hiss	Hit	Hitch	Hive	Hiz	Hilt	Hing	Hick
Capacity, Steam	sq. ft.	1600	2000	2300	2600	3100	3600	4000	4700	5500	6500	7500	8500	10000	11500	13000	14000	16000
Capacity, Water	sq. ft.	2600	3300	3800	4300	5100	5900	6600	7800	9100	10700	12400	14000	16500	19000	21500	23100	26400
Heating Surface	sq. ft.	206	243	288	297	345	393	425	480	535	628	741	839	973	1064	1194	1291	1456
Area of Upper Grate	sq. ft.	5.9	7.2	8.4	8.6	10.1	11.4	11.8	13.2	15.0	17.1	19.1	21.1	23.3	23.5	25.9	28.5	31.3
Diameter of Boiler	in.	36	36	36	42	42	42	48	48	48	54	54	60	60	66	66	72	72
Length Boiler Over-all	ft. in.	8–7	10–2	11–7	9–10	11–4	12–10	12–4	13–10	15–4	15–9	18–3	17–10	20–4	18–4	20–4	18–4	20–4
Approx. Weight, Pounds		4600	5100	5600	6200	6800	7300	8500	9100	9800	12500	13900	16400	18000	20400	22100	23800	25800

The Kewanee Smokeless Down-Draft Boiler is designed and constructed to burn efficiently any kind of coal or oil. Thousands of these boilers are operating and have been for years fired with the very poorest grades of coal, causing no smoke whatever. The many splendid installations are proofs of the dependability of the Kewanee Down-Draft Boiler and the increasing demand we believe is further proof of its ability to maintain the highest possible heating efficiency.

KEWANEE SMOKELESS BOILER Specifications—Brick-set Type—*Cont.*

Built much stronger than the A. S. M. E. Boiler Code requires

Number of Boiler		104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
Width of Firebox	in.	30	30	30	36	36	36	42	42	42	48	48	53	53	59	59	65	65
Length of Firebox	in.	45	51	57	54	60	66	66	72	78	78	84	90	96	90	96	96	102
Diam. of Breeching	in.	20	20	22	22	22	24	24	27	27	30	30	34	34	36	36	38	38
Diam. of Stack	in.	18	18	20	20	20	22	22	24	24	28	28	32	32	34	34	36	36
Minimum Height of Stack	ft.	45	45	45	50	50	50	50	55	55	60	60	60	60	70	70	70	70
Diameter of Breeching, Two Boilers	in.	26	26	28	28	30	32	32	34	34	36	38	42	42	44	45	48	50
Diameter of Stack, Two Boilers	in.	24	24	26	26	28	30	30	32	32	34	36	38	38	40	42	44	46
Minimum Height of Stack, Two Boilers	ft.	55	55	55	60	60	60	60	60	60	70	70	70	75	75	80	80	80
Size of Steam Opening	in.	5	6	6	6	6	6	6	6	8	8	8	8	8	8	8	8	8
Size of Return	in.	3	3	3	4	4	4	4	4	5	5	5	5	5	6	6	6	6
Size of Safety Valve	in.	1½	1½	2	2	2	2	2	2½	2½	3	3	3	3½	3½	4	4	Two 2½
Height of Water-line	in.	55	55	55	58½	58½	58½	61	61	61	66	66	75	75	80	80	85½	85½
Height from Floor to Top of Brickwork	in.	77	77	77	83	83	83	90	90	90	96	96	108	108	114	114	120	120

For setting plans and measurements see pages 8 and 9.

CHIMNEY CAPACITY

A correct chimney is absolutely necessary to a boiler. No boiler, no matter how scientifically and carefully constructed, will work properly unless the chimney is the proper size and height.

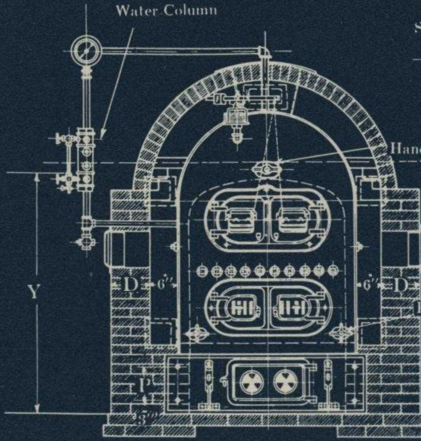
We publish in tables of specifications a set of figures for the area and height of chimneys required with Kewanee Boilers of different capacities.

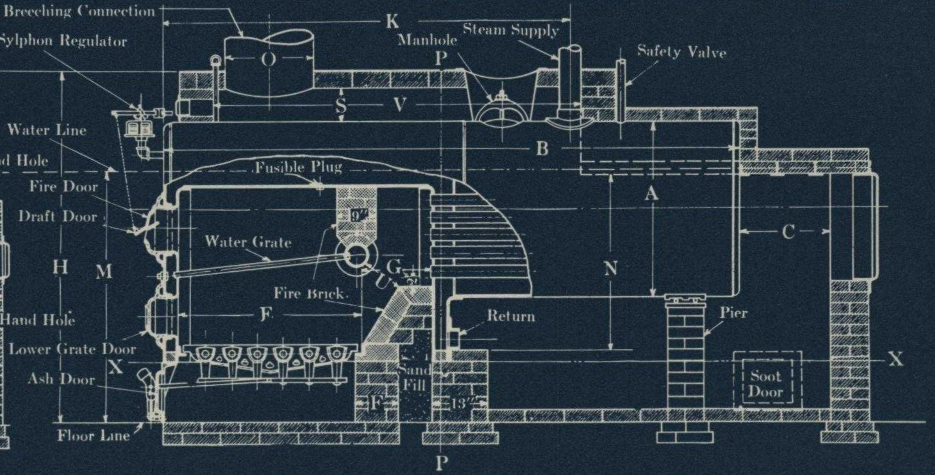
KEWANEE SMOKELESS BOILER —Brick-set—Section Showing Setting with Stack Connection at Front

Dimension "Y" to be 2" Greater on Boilers over 15 lbs. Working Pressure

Front Elevation and Cross Section Thru Brick Work at P—P

Ash Pit 14" High from Nos. 104 to 114 Boilers and 17" High from Nos. 115 to 120 Boilers





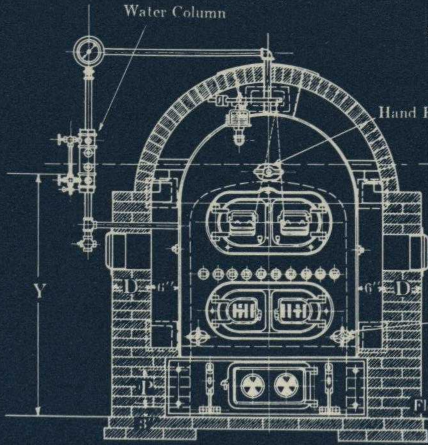
Longitudinal Section Showing Breeching Connection at Front

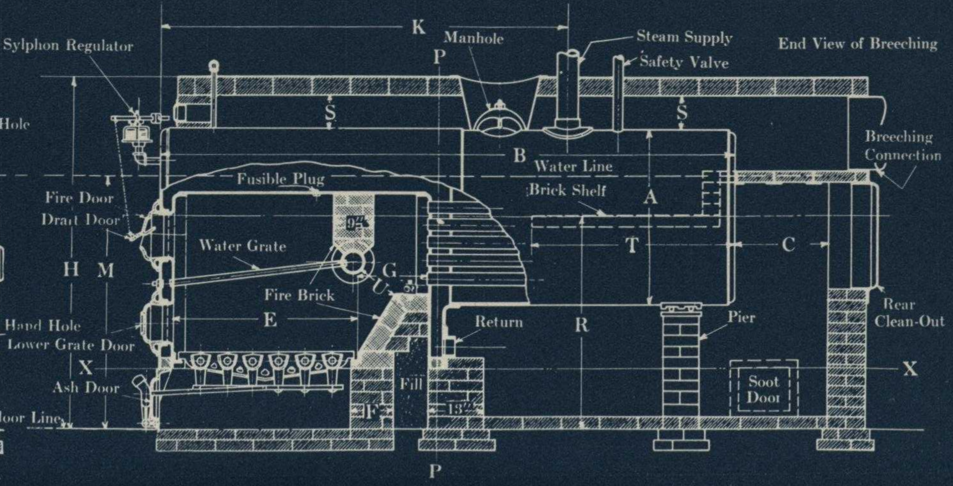
KEWANEE SMOKELESS BOILER —Brick-set—Section Showing Setting with Stack Connection at Rear

Dimension "Y" to be 2" Greater on Boilers over 15 lbs. Working Pressure

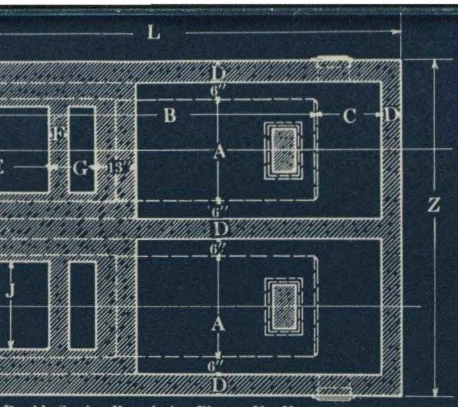
Front Elevation and Cross Section Thru Brick Work at P—P

Ash Pit 14" High from Nos. 104 to 114 Boilers and 17" High from Nos. 115 to 120 Boilers

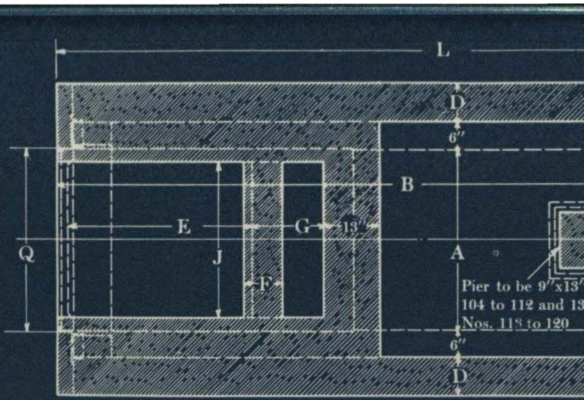




Longitudinal Section Showing Breeching Connection at Rear



Double Setting Foundation Plan at X—X



Foundation Plan at X—X

	104	105	106	107	108	109	110	111	112	113	114	115	116	117
in.	36	36	36	42	42	42	48	48	48	54	54	60	60	66
ft. in.	8-7	10-1	11-7	9-10	11-4	12-10	12-4	13-10	15-4	15-9	18-3	17-10	20-4	18-4
in.	17	17	17	22	22	22	22	22	22	24	24	24	24	24
in.	9	9	9	9	9	9	9	9	9	13	13	13	13	13
in.	31	37	43	37	43	49	43	49	55	55	61	61	67	61
all. in.	9	9	9	9	9	9	13	13	13	18	18	18	18	18
t in.	14	14	14	17	17	17	23	23	23	23	23	29	29	29
in.	77	77	77	83	83	83	90	90	90	96	96	108	108	114
in.	31	31	31	37	37	37	43	43	43	49	49	54	54	60
ply ft. in.	6-0	7-0	8-0	7-6	8-0	8-9	8-10	9-8	10-4	11-0	11-6	11-10	13-0	12-0
ft. in.	10-9	12-3	13-9	12-5	13-11	15-5	14-11	16-5	17-11	18-10	21-4	20-11	23-5	21-5
in.	55	55	55	58½	58½	58½	61	61	61	66	66	75	75	80
in.	36	36	36	39	39	39	42	42	42	48	48	51	51	58
nn. in.	20	20	22	22	22	24	24	27	27	30	30	34	34	36
Bolts. in.	8	8	8	8	8	8	8	8	8	8	8	11	11	11
Bolts in.	36	36	36	42	42	42	48	48	48	54	54	60	60	66
in.	47	47	47	50	50	50	53	53	53	56	56	63	63	66
in.	7	7	7	7	7	7	8	8	8	8	8	10	10	10
in.	36	42	54	36	48	60	54	66	80	84	102	90	108	90
all in.	7	8	9	9	10	12	10	11	12½	13	14	14	15½	14
ft. in.	5-3	6-3	7-3	7-0	7-6	8-0	8-1	8-11	9-9	10-0	10-6	10-10	12-0	11-0
ft. in.	5-6	5-6	5-6	6-0	6-0	6-0	6-6	6-6	6-6	7-8	7-8	8-2	8-2	8-8
umn in.	53½	53½	53½	57	57	57	59½	59½	59½	64½	64½	72½	72½	77½
g ft. in.	10-3	10-3	10-3	11-3	11-3	11-3	12-3	12-3	12-3	14-3	14-3	15-3	15-3	16-3
in.	5	6	6	6	6	6	6	6	8	8	8	8	8	8
in.	1½	1½	2	2	2	2	2	2½	2½	3	3	3	3½	3½
in.	3	3	3	4	4	4	4	4	5	5	5	5	5	6
	85	85	85	100	100	100	130	130	130	155	155	215	215	250
k	2200	2350	2450	2600	2850	3100	3700	4000	4300	6000	6600	7350	7900	7800
Boilers	3900	4100	4300	4500	4950	5350	6500	7000	7550	10500	11500	12750	13700	13200

ed.
ly only to boiler settings with breeching connection at front. Key letters R and T apply only to boiler settings with breeching connection at re

KEWANEE FIREBOX BOILERS

AFTER forty continuous years of steel boiler operation, in apartments, hotels, clubhouses, schools, industrial buildings, etc., KEWANEE Fire-box Boilers are universally recognized as the standard steel boilers for low-pressure heating.

During these years of successful building of steel-riveted boilers, building owners, architects, engineers and heating contractors have realized that KEWANEE is the most dependable boiler built for any type of building where weather conditions are so changeable that a heating boiler must be ready for strenuous service almost at a moment's notice.

Up-Draft Brick-set Type

KEWANEE Up-Draft Fire-box Boilers have proved to be exceptionally long-lived. Many of the first which were built almost forty years ago are still in operation and giving good service.

Ample Heating Surface

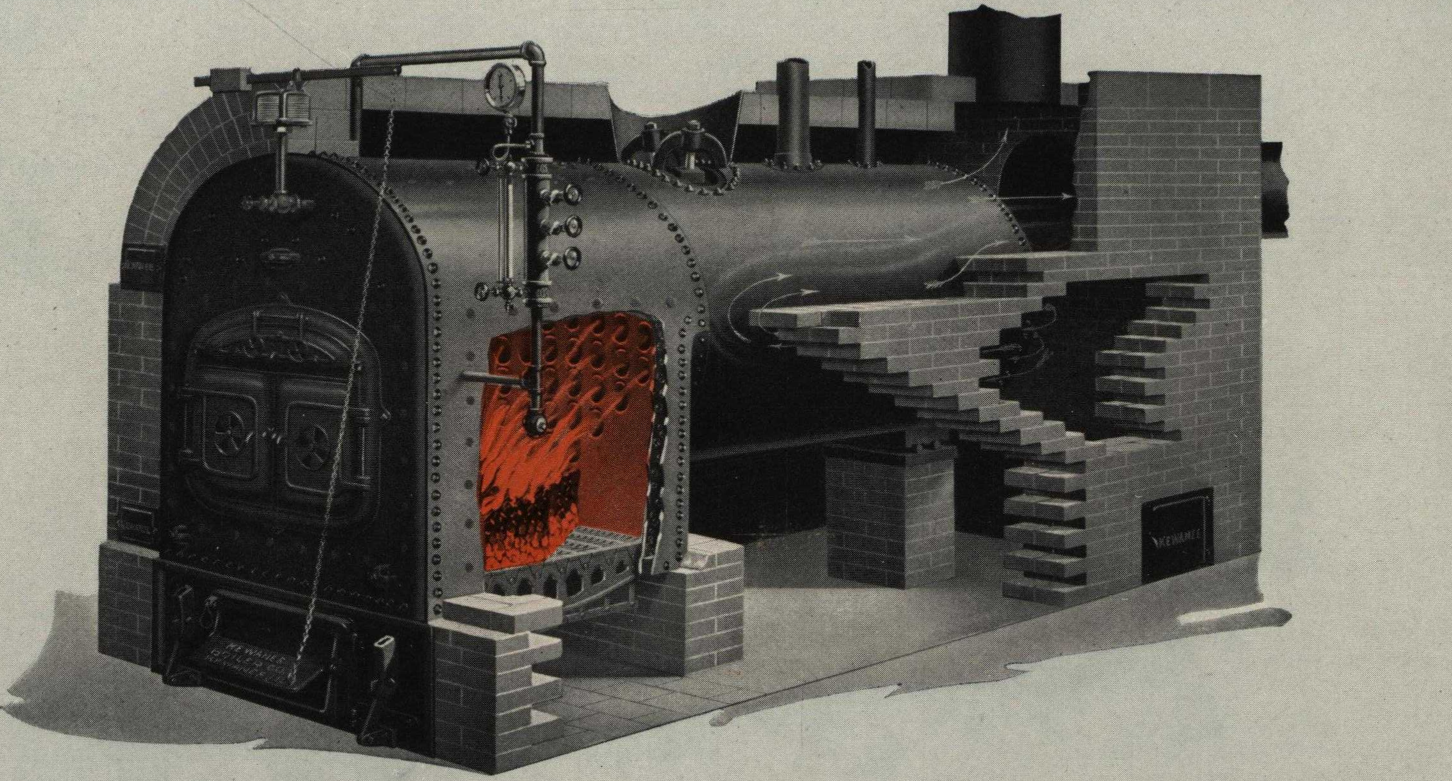
THE heating surface of a KEWANEE Boiler is that portion of the boiler containing water, against which the fire and flue gases come in contact. This includes the fire-box of the boiler—which is surrounded by water; the tubes; and in brick-set types the outside surface of the cylinder or shell, below the water-line. So the KEWANEE Boiler has most effective heating surface. An unbroken disengaging area at the surface of their large water content assures generous supplies of dry steam at all times.

Spacious Fire-Boxes

PRODUCTS of combustion require room for expansion. KEWANEE Boilers have spacious fire-boxes which allow for the proper burning of the gases, and they have plenty of long tubes, big enough to carry the large volume of expanded gases through the water covered flues slowly, permitting complete absorption of the heat.

Low-Temperature Chimney Gas

IN KEWANEE Boilers, so great is the percentage of the available heat from combustion which is transferred inside the boiler shell, that only sufficient temperature is left in the flue gases to create the necessary chimney draft.



KEWANEE FIREBOX BOILER

Brick-set Up-Draft Type

Numbers 0 to 20

For heating 700 to 14,000 sq. ft. radiation

THE standard of the trade for nearly forty years. Burns any fuel without skilled attention. Has low water line. Flues clean from front. Front or rear smoke outlet. Brick for setting usually available from building construction. First cost and efficiency approximately the same as portable up-draft covered with asbestos. The dead-plate or coking method of firing will give least smoke in up-draft operation.

KEWANEE FIREBOX BOILER Specifications—Brick-set Type

These Boilers will heat all the radiation shown by their capacity

Built much stronger than the A. S. M. E. Boiler Code requires

Number of Boiler	0	1	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	20
Code, Steam Boiler	Dab	Dagon	Daft	Daub	Dawn	Dairy	Damp	Dash	Data	Dated	Dead	Dear	Debut	Defer	Devil	Deist	Delve	Demit	Dense	Dart
Code, Water Boiler	Dan	Dirty	Deter	Dingy	Dirge	Darn	Debar	Drill	Draft	Dregs	Drink	Debit	Decay	Dusk	Decot	Decry	Deflux	Delta	Demon	Dental
Capacity, Steam . . . . sq. ft.	700	900	1050	1200	1400	1700	2000	2600	3000	3500	4000	4500	5500	6500	7500	8700	10000	11000	12000	14000
Capacity, Water . . . . sq. ft.	1150	1500	1700	2000	2300	2800	3300	4300	5000	5800	6600	7400	9100	10700	12400	14400	16500	18200	19800	23100
Heating Surface . . . . sq. ft.	84	113	131	147	180	215	250	305	350	368	420	472	560	673	743	873	954	1080	1167	1329
Area of Grate sq. ft.	3.5	4.4	5.4	6.4	6.8	8.0	9.3	11.1	12.6	12.9	14.7	16.5	18.8	20.8	22.9	25.1	25.5	28.0	30.8	33.5
Diam. of Boiler in.	24	30	30	30	36	36	36	42	42	48	48	48	54	54	60	60	66	66	72	72
Length of Boiler Over-all . . ft. in.	6-10	6-5	7-6	8-6	7-6	9-0	10-6	10-0	11-6	10-6	12-0	13-6	13-11	16-5	15-6	18-0	16-0	18-0	16-0	18-0
Approx. Weight, Pounds	1900	2400	2700	2900	3300	3700	4200	5400	6000	6700	7300	8000	10600	11900	14400	16000	17800	19100	21700	23500

It frequently happens that enough brick will be left over from the building construction to complete the boiler setting, in which case money will be saved by the use of this type.

In a matter of fuel saving the brick-set type, if kept clean, is as economical as the portable type.

The selection is a matter of preference with the architect or owner.

KEWANEE FIREBOX BOILER Specifications—Brick-set Type—*Cont.*

Built much stronger than the A. S. M. E. Boiler Code requires

Number of Boiler	0	1	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	20
Width of Firebox . . . in.	19	24	24	24	30	30	30	36	36	42	42	42	48	48	53	53	59	59	65	65
Length of Firebox . . in.	26	26	32	38	32	38	44	44	50	44	50	56	56	62	62	68	62	68	68	74
Height of Firebox . . . in.	30	35	35	35	38	38	38	41	41	44	44	44	49	49	54	54	59	59	64	64
Diameter of Breeching . in.	10	12	14	16	16	18	18	20	22	22	24	24	28	28	32	32	32	32	36	36
Diameter of Stack . . in.	10	12	12	14	14	16	16	18	20	20	22	22	26	26	30	30	30	30	34	34
Minimum Height of Stack ft.	35	40	40	40	40	40	45	45	45	45	50	50	50	50	55	55	60	60	60	60
Diameter of Breeching, Two Boilers . . . . in.	16	18	20	22	22	24	24	28	32	32	32	34	36	36	40	40	40	42	44	46
Diameter of Stack, Two Boilers . . . . in.	16	18	18	20	20	22	22	26	28	28	30	32	34	34	36	36	36	38	40	42
Minimum Height of Stack, Two Boilers . . . . ft.	40	45	45	45	45	45	45	50	50	50	50	50	55	60	60	70	70	70	70	70
Size of Steam Opening . in.	3	4	4	5	5	6	6	6	6	6	6	8	8	8	8	8	8	8	8	8
Size of Return . . . . in.	2	2½	2½	3	3	3	3	4	4	4	4	5	5	5	5	5	6	6	6	6
Size of Safety Valve . . in.	1	1¼	1¼	1¼	1½	1½	2	2	2	2	2½	2½	2½	3	3	3½	3½	3½	4	4
Height of Water-line . . in.	47	52	52	52	55	55	55	58½	58½	61	61	61	66	66	75	75	80	80	85½	85½
Height from floor to Top of Brickwork . . . . in.	64	70	70	70	77	77	77	83	83	90	90	90	96	96	108	108	114	114	120	120

For setting plans and measurements see pages 14 and 15.

Kewanee Boilers may be found heating the best of buildings from New York to San Francisco and from Montreal as far south as heat is required.

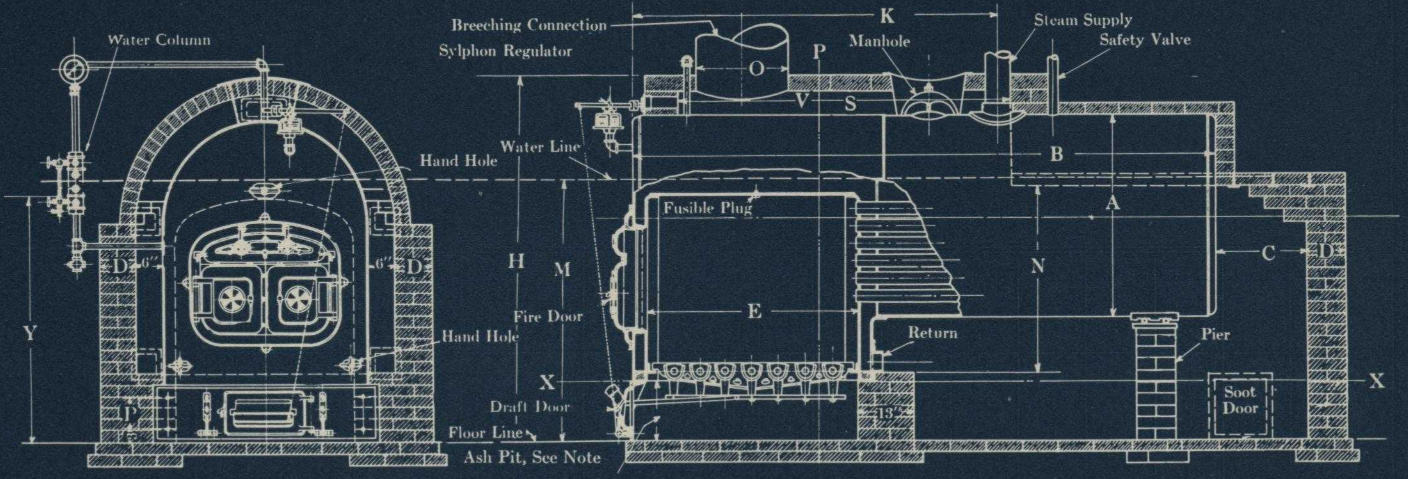
Many of the first Kewanee Boilers built are still on the job—nearly forty years old.

KEWANEE FIREBOX BOILER —Brick-set—Section Showing Setting with Stack Connection at Front

Dimension "Y" to be 2" Greater on Boilers over 15 lbs. Working Pressure

Front Elevation and Cross Section Thru Brickwork at P—P

Ash Pit 14" High from Nos. 1 to 14 Boilers and 17" High from Nos. 15 to 20 Boilers



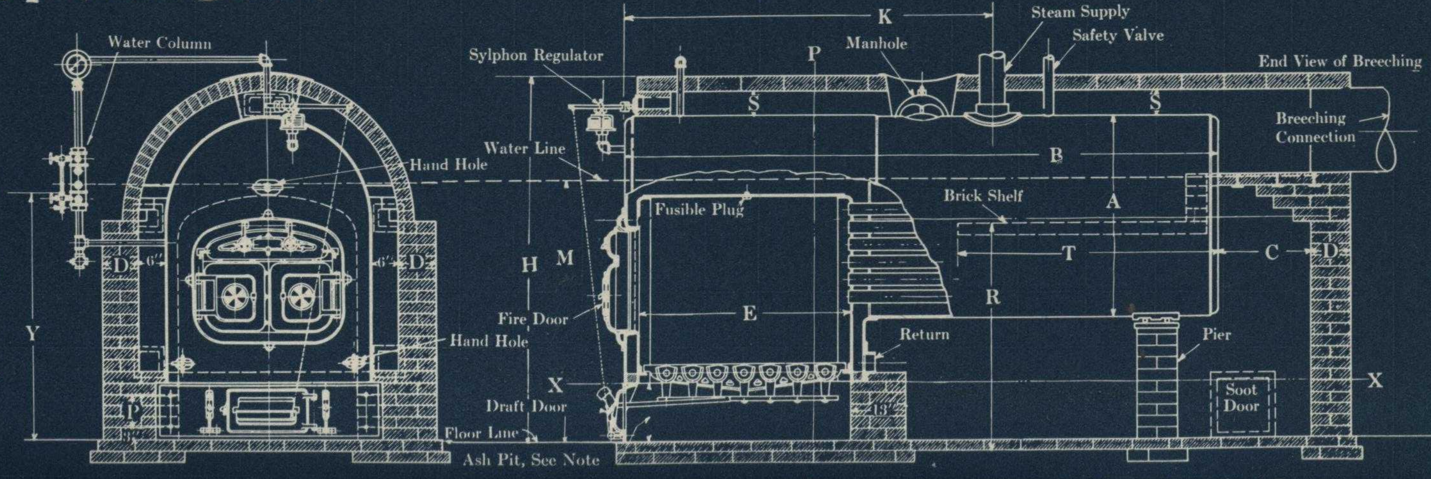
Longitudinal Section Showing Breeching Connection at Front

KEWANEE FIREBOX BOILER —Brick-set—Section Showing Setting with Stack Connection at Rear

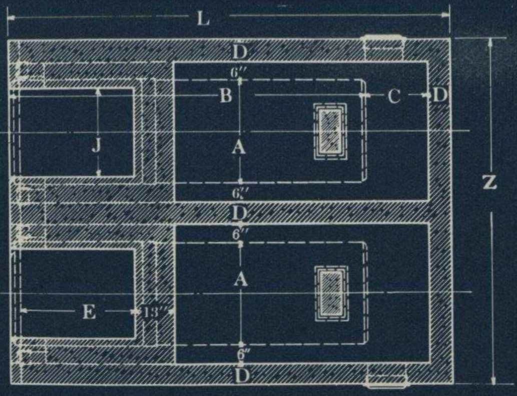
Dimension "Y" to be 2" Greater on Boilers over 15 lbs. Working Pressure

Front Elevation and Cross Section Thru Brickwork at P—P

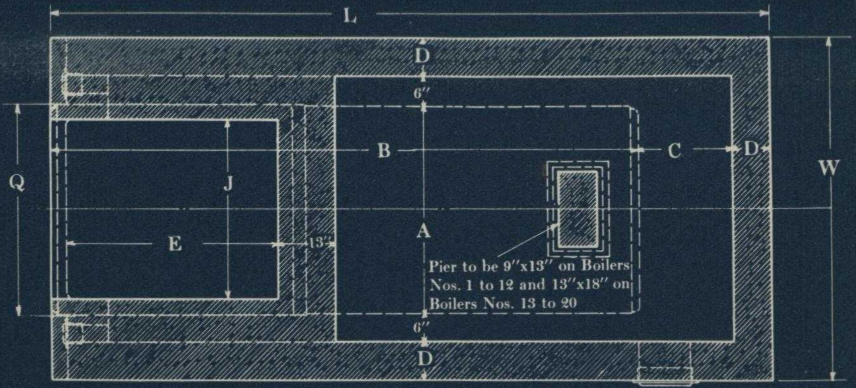
Ash Pit 14" High from Nos. 1 to 14 Boilers and 17" High from Nos. 15 to 20 Boilers



Longitudinal Section Showing Breeching Connection at Rear



Double Setting Foundation Plan at X—X



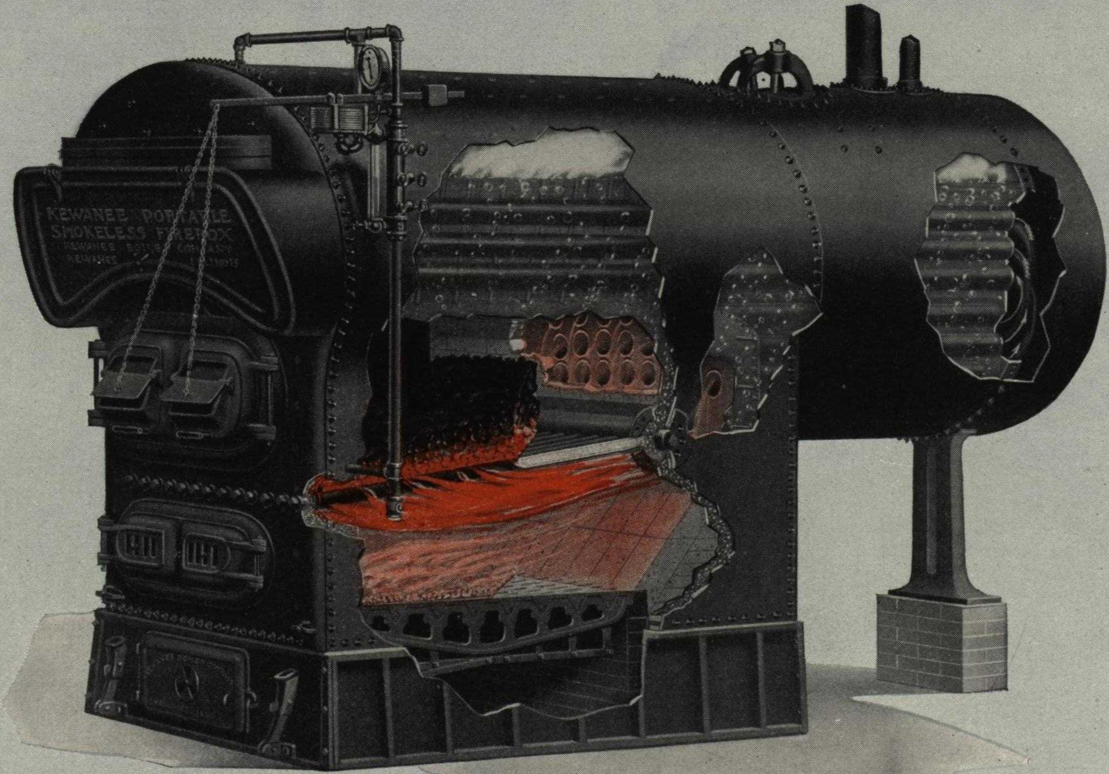
L
Q
D
6″
B
C
D
W
J
A
E
13″
Pier to be 9″x13″ on Boilers Nos. 1 to 12 and 13″x18″ on Boilers Nos. 13 to 20
6″
D

Foundation Plan at X—X

Number of Boiler		0	1	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	20
A—Diameter of Boiler	in.	24	30	30	30	36	36	36	42	42	48	48	48	54	54	60	60	66	66	72	72
B—Length of Boiler	ft. in.	6-10	6-5	7-6	8-6	7-6	9-0	10-6	10-0	11-6	10-6	12-0	13-6	13-11	16-5	15-6	18-0	16-0	18-0	16-0	18-0
C—Rear Space	in.	14	17	17	17	17	17	17	22	22	22	22	22	24	24	24	24	24	24	28	28
D—Thickness Wall	in.	9	9	9	9	9	9	9	9	9	9	9	9	13	13	13	13	13	13	13	13
E—Length of Grate	in.	26	26	32	38	32	38	44	44	50	44	50	56	56	62	62	68	62	68	68	74
H—Height of Brickwork	in.	64	70	70	70	77	77	77	83	83	90	90	90	96	96	108	108	114	114	120	120
J—Width Ash-pit	in.	19	25	25	25	31	31	31	37	37	43	43	43	49	49	54	54	60	60	66	66
K—Location of Supply	ft. in.	4-0	4-0	4-8	5-6	4-11	5-11	6-11	6-8	7-2	7-0	7-10	8-6	9-2	9-8	9-6	10-8	9-8	10-8	9-9	10-9
L—Length Over-all	ft. in.	8-8	8-7	9-8	10-8	9-8	11-2	12-8	12-7	14-1	13-1	14-7	16-1	17-0	19-6	18-7	21-1	19-1	21-1	19-5	21-5
M—Height of Water-line	in.	47	52	52	52	55	55	55	58½	58½	61	61	61	66	66	75	75	80	80	85½	85½
N—Height of Side Flue	ft. in.	2-6	2-8	2-8	2-8	3-0	3-0	3-0	3-3	3-3	3-6	3-6	3-6	4-0	4-0	4-3	4-3	4-10	4-10	5-3	5-3
O—Diameter Breeching Connection	in.	10	12	14	16	16	18	18	20	22	22	24	24	28	28	32	32	32	32	36	36
P—Center to Center Anchor Bolts	in.	8	8	8	8	8	8	8	8	8	8	8	8	8	8	11	11	11	11	11	11
Q—Center to Center Anchor Bolts	in.	24	30	30	30	36	36	36	42	42	48	48	48	54	54	60	60	66	66	72	72
R—Height Brick Shelf	in.	41	44	44	44	47	47	47	50	50	53	53	53	56	56	63	63	66	66	69	69
S—Top Flue Space	in.	6	6	6	6	7	7	7	7	7	8	8	8	8	8	10	10	10	10	10	10
T—Length Brick Shelf	in.	36	30	38	44	36	42	54	48	60	54	66	80	84	102	90	108	90	108	84	102
V—Length of Arch	ft. in.	3-2	3-2	3-10	4-9	4-1	5-1	6-1	6-3	6-9	6-3	7-3	7-9	8-1	8-7	8-5	9-7	8-7	9-8	8-9	9-9
W—Width Over-all	ft. in.	4-6	5-0	5-0	5-0	5-6	5-6	5-6	6-0	6-0	6-6	6-6	6-6	7-8	7-8	8-2	8-2	8-8	8-8	9-2	9-2
Y—Height of Water Column	in.	45½	50½	50½	50½	53½	53½	53½	57	57	59½	59½	59½	64½	64½	72½	72½	77½	77½	83	83
Z—Width Double Setting	ft. in.	8-3	9-3	9-3	9-3	10-3	10-3	10-3	11-3	11-3	12-3	12-3	12-3	14-3	14-3	15-3	15-3	16-3	16-3	17-3	17-3
Size of Steam Supply	in.	3	4	4	5	5	6	6	6	6	6	6	8	8	8	8	8	8	8	8	8
Size of Safety Valve	in.	1	1¼	1¼	1¼	1½	1½	2	2	2	2	2½	2½	2½	3	3	3½	3½	3½	4	4
Size of Return	in.	2	2½	2½	3	3	3	3	4	4	4	4	5	5	5	5	5	6	6	6	6
*Number of Common Brick		1325	1450	1600	1750	1900	2150	2400	2650	2900	3000	3300	3600	5300	5900	6500	7200	7200	7700	7700	8200
*Common Brick for Two Boilers		2250	2450	2700	2950	3300	3750	4100	4750	5350	5400	5900	6450	8350	10350	11350	12550	12400	13450	13250	13850

*Foundations not included.

Key letters N and V apply only to boiler settings with breeching connection at front. Key letters R and T apply only to boiler settings with breeching connection at rear.



KEWANEE SMOKELESS BOILER

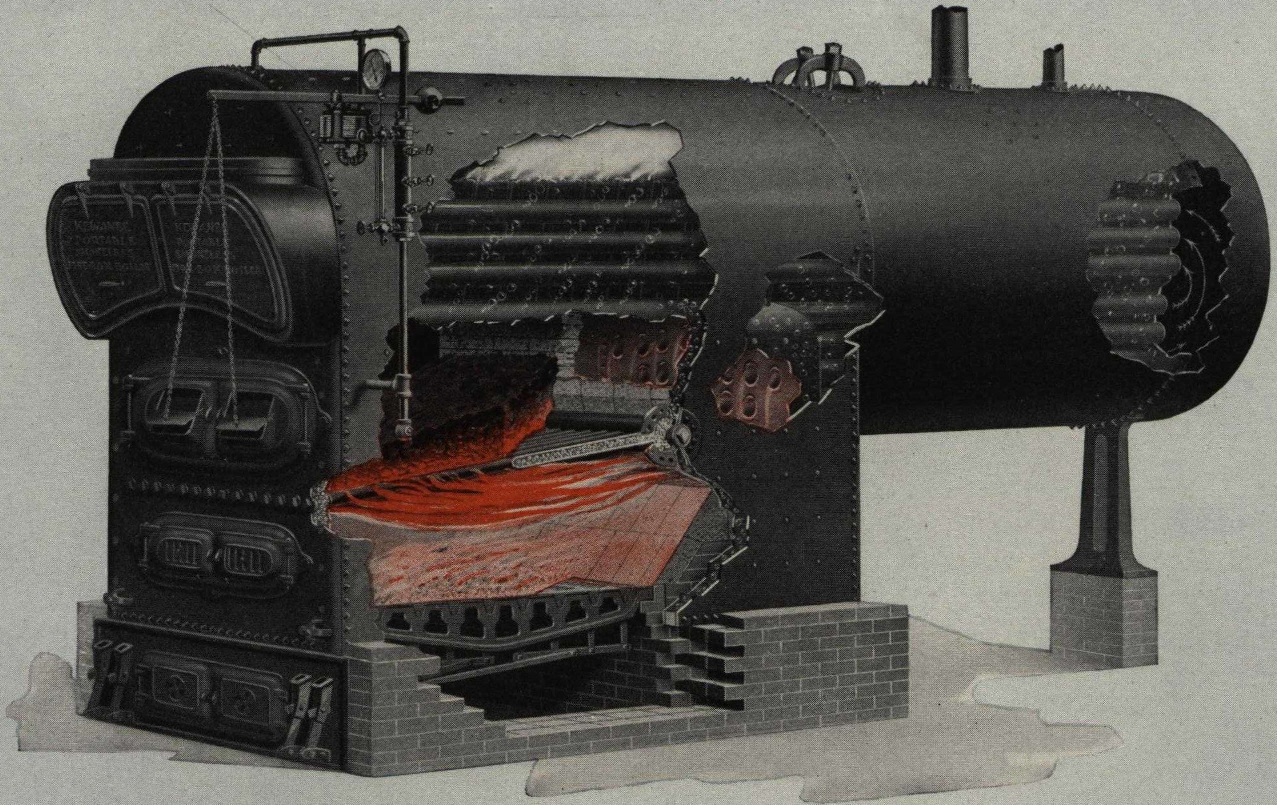
Portable Down-Draft Type

Numbers 307 to 314

For heating 3000 to 6500 sq. ft. radiation

Iron ash-pit and backstand used on Nos. 309 and smaller only.
Brick base shown on page 17 used on Nos. 310 and larger.

BURNS any fuel smokelessly. Flues clean from front and rear. Asbestos covered. No brick setting. Takes small floor space. Stack outlet at front.



KEWANEE SMOKELESS BOILER

Portable Down-Draft Type

Numbers 315 to 324

For heating 7500 to 30,000 sq. ft. radiation

Asbestos covered. No brick setting. Takes small floor space.

BURNS any fuel smokelessly. Flues clean from front and rear. Stack outlet at front. Brick base. Kewanee Smokeless Down-Draft Boilers are used in single units or in groups for heating the larger size buildings with greatest economy of fuel and with lowest up-keep cost.

KEWANEE SMOKELESS BOILER Specifications—Portable Type

These Boilers will heat all the radiation shown by their capacity

Built much stronger than the A. S. M. E. Boiler Code requires

Number of Boiler	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324
Code, Steam Boiler	Panel	Panic	Pansy	Papa	Paper	Parch	Pail	Parcel	Pardon	Park	Parole	Party	Pastry	Patrol	Pawn	Pay	Pause	Pave
Code, Water Boiler	Pelt	Penal	Pencil	Pen	Pepsin	Perch	Perfect	Peril	Period	Perish	Permit	Persue	Person	Peruse	Petal	Pestle	Petty	Pewter
Capacity, Steam sq. ft.	3000	3500	4000	4500	5000	5500	6000	6500	7500	8500	10000	12000	14000	16000	18000	20000	25000	30000
Capacity, Water sq. ft.	5000	5800	6600	7400	8300	9100	9900	10700	12400	14000	16500	19800	23100	26400	29700	33000	40000	48000
Heating Surface sq. ft.	297	352	391	446	496	546	592	643	721	773	912	1053	1204	1316	1458	1549	2074	2629
Area of Upper Grate sq. ft.	8.8	10.1	11.4	12.9	14.7	16.5	17.1	18.5	20.0	21.4	23.5	25.9	28.5	29.9	32.6	34.6	41.7	44.8
Diameter of Boiler in.	48	48	48	54	54	54	60	60	60	60	66	66	72	72	78	78	84	84
Length of Boiler Over-all ft. in.	9–1	10–5	11–5	10–11	11–11	12–11	12–11	13–11	15–3	16–3	15–9	17–9	16–7	17–11	17–10	18–10	20–1	24–1
Approx. Weight, Pounds	7800	8600	9300	10400	11100	11900	14500	15300	16900	17800	20900	22900	25000	26500	28800	30000	37000	43000

The Kewanee Down-Draft Boiler is designed primarily for smokeless operation with soft coal but will burn any fuel most economically. The extreme heat of burning oil is developed with high efficiency and absorbed by a water content large enough to hold the water line steady even with the heaviest loads.

KEWANEE SMOKELESS BOILER Specifications—Portable Type—*Cont.*

Built much stronger than the A. S. M. E. Boiler Code requires

Number of Boiler		307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324
Width of Firebox	in.	36	36	36	42	42	42	48	48	53	53	59	59	65	65	71	71	77	77
Length of Firebox	in.	54	60	66	72	78	84	78	84	90	96	90	96	96	102	102	108	114	120
Diameter of Breeching	in.	22	22	22	24	24	24	26	26	28	28	30	32	34	34	36	36	40	42
Diameter of Stack	in.	20	20	20	22	22	22	24	24	26	26	28	30	32	32	34	34	38	40
Minimum Height of Stack	ft.	50	55	55	55	55	60	60	60	65	65	65	70	70	70	80	90	90	100
Diameter of Breeching, Two Boilers	in.	30	30	30	34	34	34	38	38	40	40	44	46	50	50	52	52	56	56
Diameter of Stack, Two Boilers	in.	28	28	28	31	31	31	34	34	36	36	40	42	46	46	48	48	54	54
Minimum Height of Stack, Two Boilers	ft.	60	65	65	65	65	70	70	70	75	75	75	80	80	80	90	100	100	110
Size of Steam Opening	in.	6	6	6	6	6	6	8	8	8	8	8	8	8	8	8	8	10	10
Size of Return	in.	4	4	4	4	4	4	5	5	5	5	6	6	6	6	6	6	6	6
Size of Safety Valve	in.	2	2	2	2½	2½	2½	3	3	3	3½	3½	4	4	4	Two 2½	Two 3	Two 3	Two 3½
Height of Water-line	in.	71	71	71	76	76	76	83	83	87	87	90	90	96	96	97	97	105	105
Height from Floor to Top of Shell	in.	84	84	84	89	89	89	98	98	101	101	107	107	113	113	115	115	121	121
Distance Required to Open Rear Flue Doors	in.	26	26	26	28	28	28	32	32	32	32	35	35	37	37	40	40	43	43

For setting plans and measurements see pages 20 to 23.

Scientific tests, as well as actual installations, have proved conclusively that Kewanee Smokeless Boilers get from 21 to 35 percent more heat from the same amount of fuel than ordinary boilers.

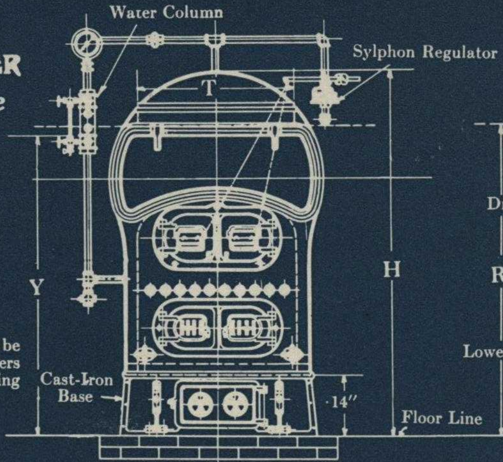
Kewanee Boilers never crack; they are built of steel plates, riveted.

KEWANEE SMOKELESS BOILER

Portable Down-Draft Type

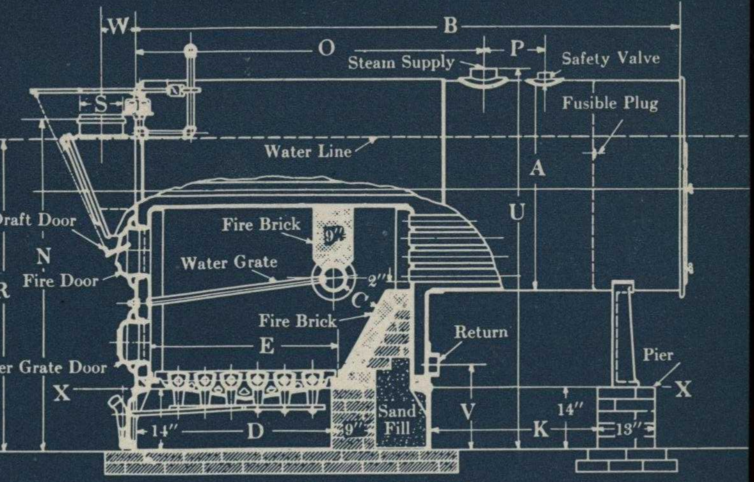
Numbers 307 to 309 with cast-iron base

Section showing setting.



Dimension "Y" to be 3″ Greater on Boilers over 15 lbs. Working Pressure

Front Elevation



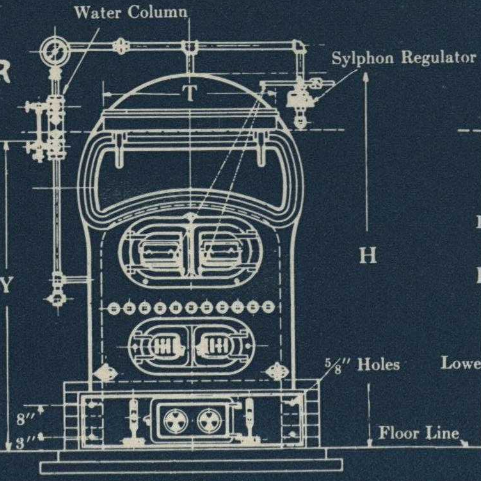
Longitudinal Section

KEWANEE SMOKELESS BOILER

Portable Down-Draft Type

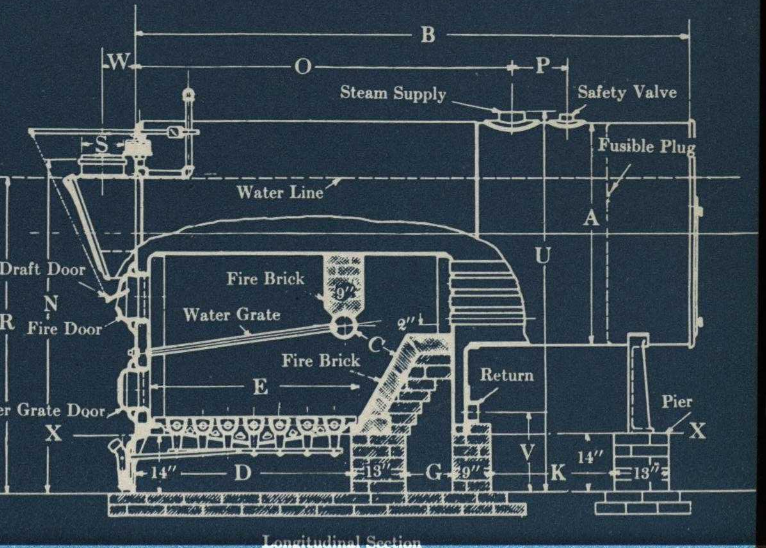
Numbers 310 to 314 with brick base

Section showing setting and foundation.



Dimension "Y" to be 3″ Greater on Boilers over 15 lbs. Working Pressure

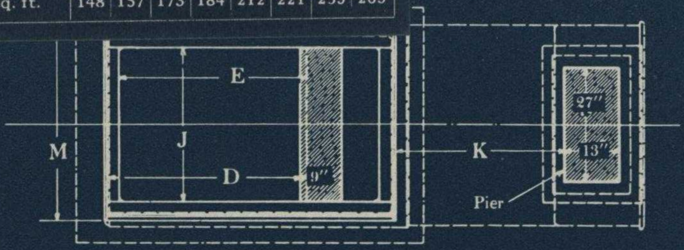
Front Elevation



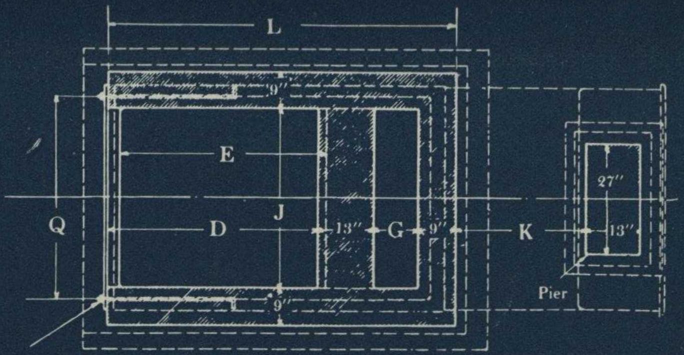
Longitudinal Section

Erratum. Page 21. Area of Outside Surface to Cover. (Omitted from table)

Number of Boiler	307	308	309	310	311	312	313	314
Outside Surface to Cover, sq. ft.	148	157	173	184	212	221	255	265



Foundation Plan with Cast-Iron Ash Pit at X—X



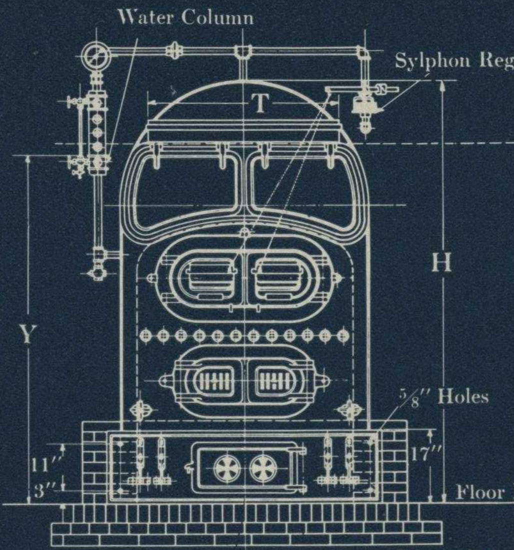
½″ Anchor Bolts

Foundation Plan with Brick Base at X —X

KEWANEE SMOKELESS BOILER Setting Measurements—Portable Type

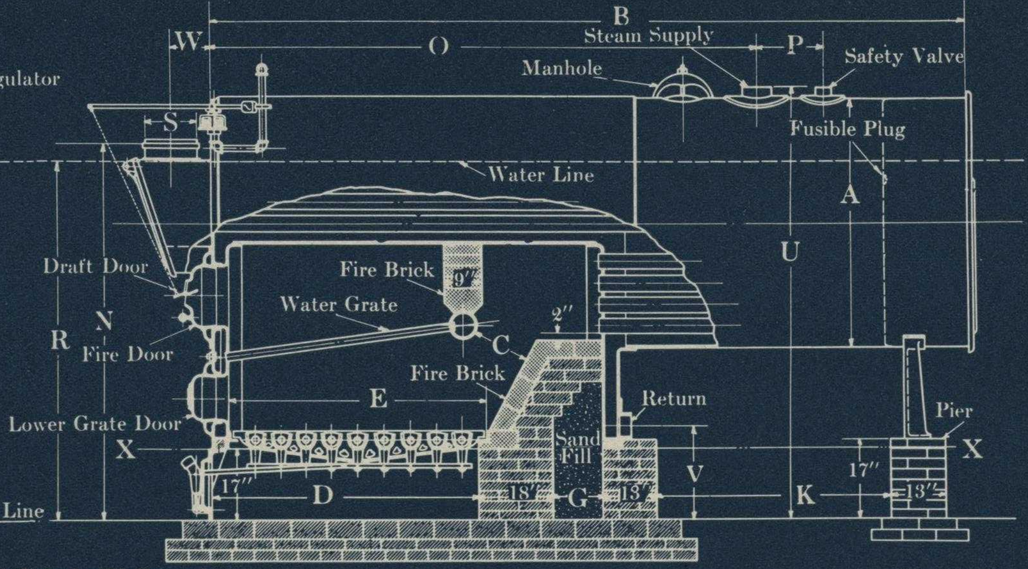
Number of Boiler		307	308	309	310	311	312	313	314
A—Diameter of Boiler	in.	48	48	48	54	54	54	60	60
B—Length of Boiler	ft. in.	9-1	10-5	11-5	10-11	11-11	12-11	12-11	13-11
C—Header to Bridgewall	in.	9	10	11½	11	12½	14	12½	14
D—Length of Ash-pit	in.	38	44	50	50	56	62	56	62
E—Length of Grate	in.	37	43	49	49	55	61	55	61
G—Bridgewall to Rear Wall	in.				12	12	12	12	12
H—Height of Boiler	in.	84	84	84	89	89	89	98	98
J—Width of Ash-pit	in.	37	37	37	43	43	43	49	49
K—Ash-pit Base to Pier	in.	29	39	45	27	33	39	45	51
L—Length of Ash-pit Base	in.	61	67	73	84	90	96	90	96
M—Width of Ash-pit Base	in.	46	46	46					
N—Height of Breeching Connection	in.	76	76	76	80	80	80	88	88
O—Location of Steam Supply	ft. in.	5-11	6-8	7-3	7-6	8-2	8-9	8-9	9-3
P—Location of Safety Valve	in.	12	14	14	13	13	15	15	18
Q—Center to Center Bolts	in.				48	48	48	54	54
R—Height of Water Line	in.	71	71	71	76	76	76	83	83
S—Width of Breeching Connection	in.	10	10	10	10	10	10	12½	12½
T—Length of Breeching Connection	in.	36	36	36	42	42	42	46	46
U—Height of Supply	in.	85	85	85	90	90	90	99	99
V—Height of Return	in.	19	19	19	19	19	19	20	20
W—Boiler to Center of Breeching	in.	8	8	8	8	8	8	9¼	9¼
Y—Height of Water Column	in.	69½	69½	69½	73½	73½	73½	81	81
Size of Steam Supply	in.	6	6	6	6	6	6	8	8
Size of Return	in.	4	4	4	4	4	4	5	5
Size of Safety Valve	in.	2	2	2	2½	2½	2½	3	3
*Number of Common Brick		200	200	200	800	825	850	1025	1050
Number of Fire Brick		115	115	115	155	155	155	195	195

*Foundations not included. For larger sizes see next two pages.

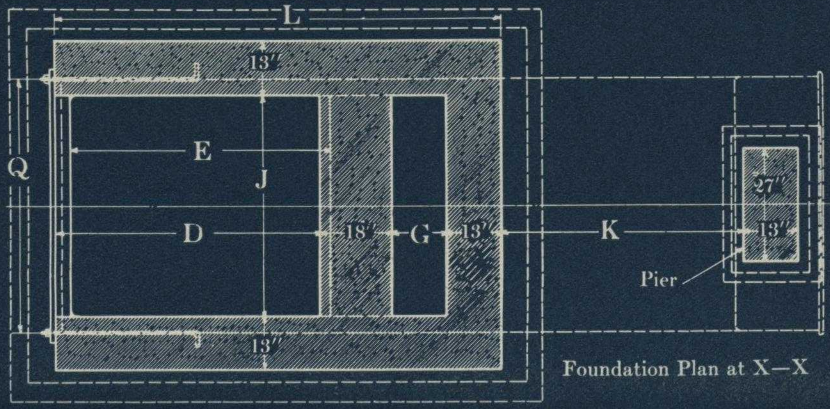


Front Elevation

Dimension "Y" to be 3″ Greater on Boilers over 15 lbs. Working Pressure



Longitudinal Section



Foundation Plan at X—X

KEWANEE SMOKELESS BOILER

Portable Down-Draft Type

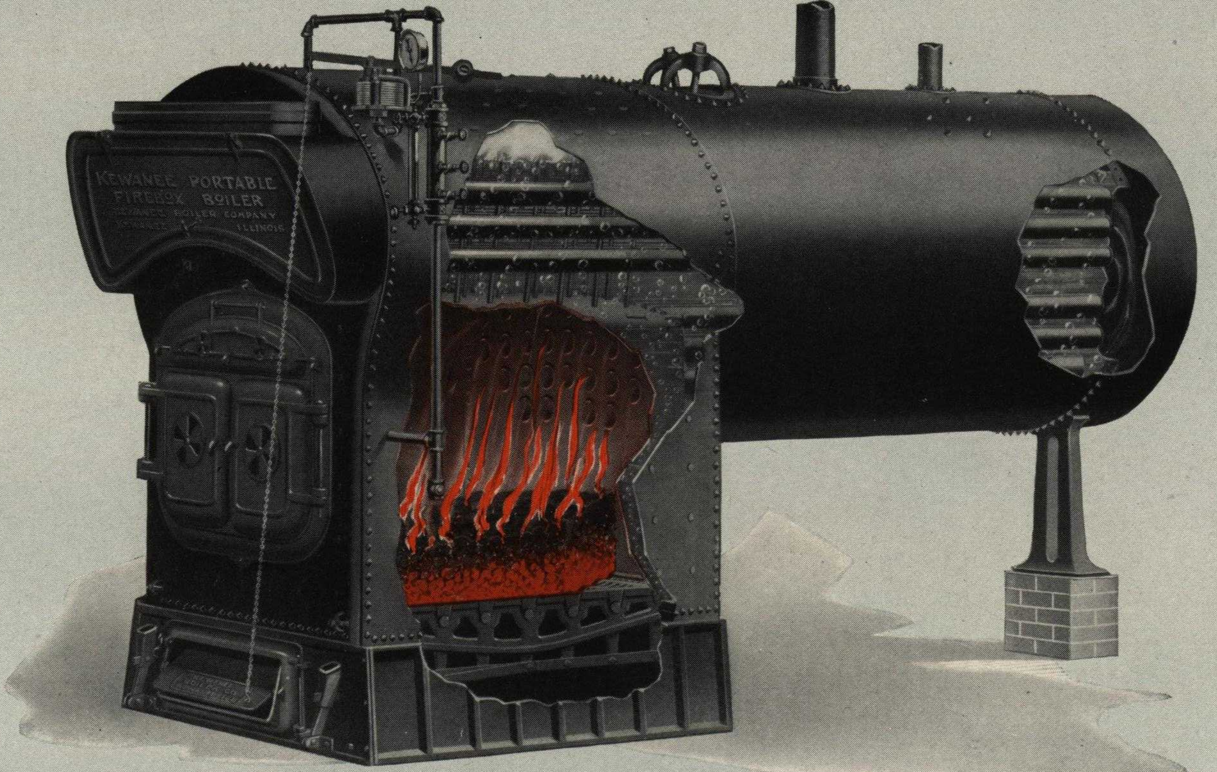
Number 315 and larger with brick base

Section showing setting plan and foundation.

KEWANEE SMOKELESS BOILER Setting and Foundation Measurements—Portable Type—*Cont.*

Number of Boiler		315	316	317	318	319	320	321	322	323	324
A—Diameter of Boiler	in.	60	60	66	66	72	72	78	78	84	84
B—Length of Boiler	ft. in.	15-3	16-3	15-9	17-9	16-7	17-11	17-10	18-10	20-1	24-1
C—Header to Bridgewall	in.	14	15	15	16	16	17	17	18	18	19
D—Length of Ash-pit	in.	63	69	63	69	69	75	75	75	81	87
E—Length of Grate	in.	61	67	61	67	67	73	73	73	79	85
G—Bridgewall to Rear Wall	in.	13	13	13	13	13	13	13	19	19	19
H—Height of Boiler	in.	101	101	107	107	113	113	115	115	121	121
J—Width of Ash-pit	in.	53	53	59	59	65	65	71	71	77	77
K—Ash-pit Base to Pier	in.	57	63	62	80	63	74	72	79	84	126
L—Length of Ash-pit Base	in.	107	113	107	113	113	119	119	125	131	137
N—Height of Breeching Connection	in.	90	90	93	93	100	100	101	101	109	109
O—Location of Steam Supply	ft. in.	10-11	11-6	11-0	11-9	11-7	12-2	12-2	12-9	13-8	15-0
P—Location of Safety Valve	in.	16	18	16	18	15	18	18	16	18	20
Q—Ctr. to Ctr. Bolts in Ash-pit Front	in.	60	60	66	66	72	72	78	78	84	84
R—Height of Water-line	in.	87	87	90	90	96	96	97	97	105	105
S—Width of Breeching Connection	in.	12½	12½	15	15	17	17	17	17	20	20
T—Length of Breeching Connection	in.	46	46	50	50	54	54	60	60	64	64
U—Height of Steam Supply	in.	103	103	109	109	115	115	117	117	123	123
V—Height of Return	in.	23	23	23	23	23	23	23	23	23	23
W—Boiler to Center of Breeching	in.	9¼	9¼	10½	10½	11½	11½	11½	11½	13	13
Y—Height of Water Column	in.	84	84	87½	87½	93½	93½	94	94	102½	102½
Size of Steam Supply	in.	8	8	8	8	8	8	8	8	10	10
Size of Return	in.	5	5	6	6	6	6	6	6	6	6
Size of Safety Valve	in.	3	3½	3½	4	4	4	Two 2½	Two 3	Two 3	Two 3½
*Number of Common Brick		1300	1350	1300	1350	1375	1450	1400	1475	1575	1600
Number of Fire Brick		210	215	240	240	255	255	290	315	425	425
Outside Surface to Cover	sq. ft.	266	280	290	330	335	360	370	400	455	545

*Foundations not included. For smaller sizes see previous two pages.



KEWANEE FIREBOX BOILER

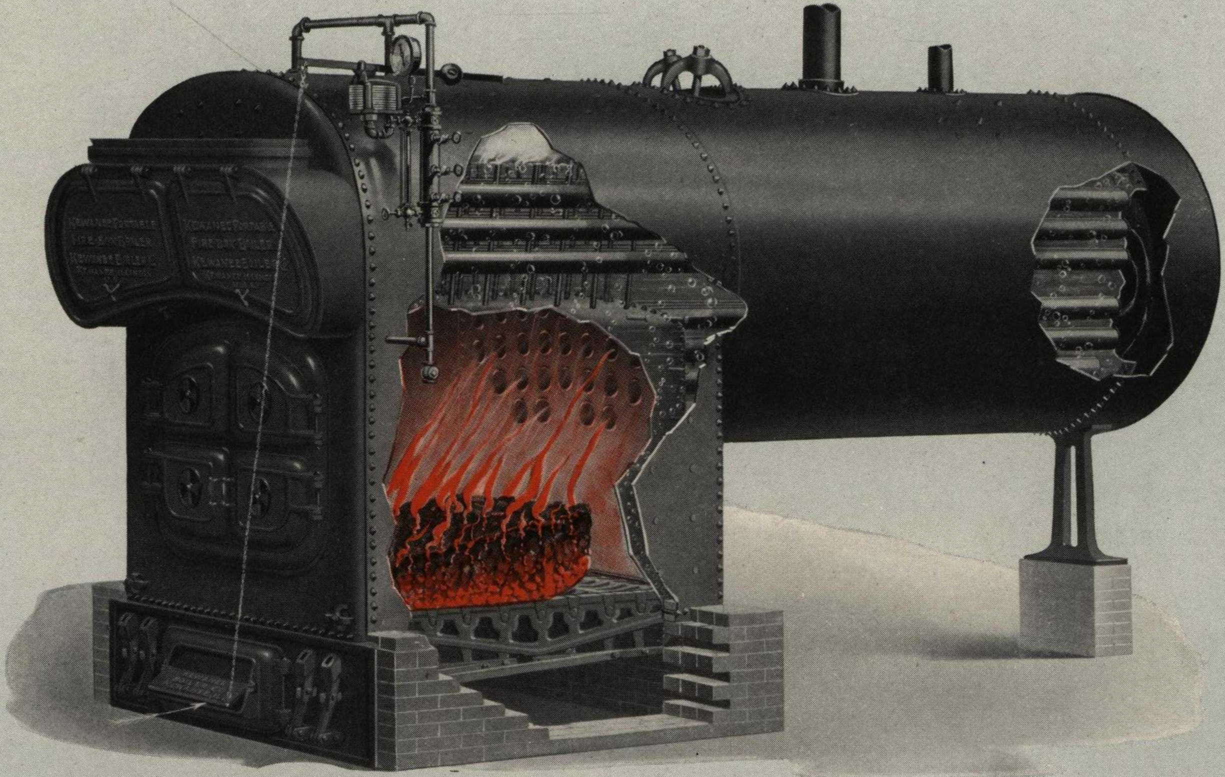
Portable Up-Draft Type

Numbers 407 to 414

For heating 2500 to 6000 sq. ft. radiation

Iron ash-pit and backstand used on Nos. 409 and smaller only. Brick base shown on page 25 used on Nos. 410 and larger.

BURNS any fuel without skilled attention. Easy to clean flues from front or rear. Asbestos covered. No brick setting. Takes small floor space. Stack outlet at front.



KEWANEE FIREBOX BOILER

Portable Up-Draft Type

Numbers 415 to 424
For heating 7000 to 28,000 sq. ft. radiation

FOR larger buildings. Burns any fuel without skilled attention. Easy to clean flues from front or rear. Asbestos covered. No brick setting. Takes small floor space. Stack outlet at front. Brick base.

KEWANEE FIREBOX BOILER Specifications—Portable Type

These Boilers will heat all the radiation shown by their capacity

Built much stronger than the A. S. M. E. Boiler Code requires

Number of Boiler	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424
Code, Steam Boiler. . .	Pipe	Plaid	Plank	Plat	Plaza	Plead	Place	Plod	Plain	Plunge	Plush	Poet	Point	Polar	Planet	Pledge	Pluck	Plump
Code, Water Boiler. . .	Prime	Prince	Print	Prism	Proud	Prone	Proxy	Psalm	Pulp	Punch	Pulse	Pure	Purge	Pyre	Pride	Prank	Puff	Pun
Capacity, Steam . . sq. ft.	2500	2900	3500	4000	4500	5000	5500	6000	7000	8000	9500	11000	13000	15000	17500	20000	25000	28000
Capacity, Water . . sq. ft.	4100	4800	5800	6600	7400	8300	9100	9900	11600	13200	15700	18200	21500	24800	28500	32000	40000	45000
Heating Surface . . sq. ft.	278	310	373	416	465	515	565	626	676	778	929	1040	1168	1303	1514	1711	2209	2427
Area of Grate . . . sq. ft.	9.6	11.1	12.6	12.9	14.7	16.5	18.8	20.8	20.7	22.9	25.5	28.0	30.8	33.5	36.6	39.6	42.9	46.1
Diameter of Boiler . . in.	48	48	48	54	54	54	60	60	60	60	66	66	72	72	78	78	84	84
Length of Boiler . . ft. in.	8–7	9–6	11–1	10–0	11–1	12–1	12–5	13–7	14–4	16–2	15–9	17–4	15–11	17–6	17–11	19–11	20–1	22–1
Approx. Weight, Pounds	6900	7400	8300	9000	9800	10600	13200	14100	15900	17300	20400	22000	24000	25700	28000	31000	37000	40000

Kewanee Boilers go into the building in one piece. Every joint and seam is inspected after being firmly riveted at the factory by men who do nothing else and have done nothing else for years and years.

KEWANEE FIREBOX BOILER Specifications—Portable Type—*Cont.*

Built much stronger than the A. S. M. E. Boiler Code requires

Number of Boiler		407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424
Width of Firebox	in.	36	36	36	42	42	42	48	48	53	53	59	59	65	65	71	71	77	77
Length of Firebox	in.	38	44	50	44	50	56	56	62	56	62	62	68	68	74	74	80	80	86
Height of Firebox	in.	41½	41½	41½	44	44	44	49	49	49	49	52	52	54½	54½	55	55	58	58
Diam. of Breeching	in.	22	22	22	24	24	24	26	26	28	28	30	32	34	34	36	36	40	42
Diam. of Stack	in.	20	20	20	22	22	22	24	24	26	26	28	30	32	32	34	34	38	40
Minimum Height of Stack	ft.	50	50	55	55	55	60	60	60	65	65	65	70	70	70	80	90	90	100
Diam. of Breeching, Two Boilers	in.	30	30	30	34	34	34	38	38	40	40	44	46	50	50	52	52	56	56
Diam. of Stack, Two Boilers	in.	28	28	28	31	31	31	34	34	36	36	40	42	46	46	48	48	54	54
Minimum Height of Stack, Two Boilers	ft.	60	60	65	65	65	70	70	70	75	75	75	80	80	80	90	100	100	110
Size of Steam Opening	in.	6	6	6	6	6	6	8	8	8	8	8	8	8	8	8	8	10	10
Size of Return	in.	4	4	4	4	4	4	5	5	5	5	6	6	6	6	6	6	6	6
Size of Safety Valve	in.	2	2	2	2	2½	2½	2½	3	3	3	3½	3½	4	4	Two 2½	Two 3	Two 3	Two 3
Height of Water-line	in.	71	71	71	76	76	76	83	83	87	87	90	90	96	96	97	97	105	105
Height Floor to Top of Shell	in.	84	84	84	89	89	89	98	98	101	101	107	107	113	113	115	115	121	121
Distance Required to Open Rear Flue Doors	in.	26	26	26	28	28	28	32	32	32	32	35	35	37	37	40	40	43	43

For setting plans and measurements see pages 28 to 31.

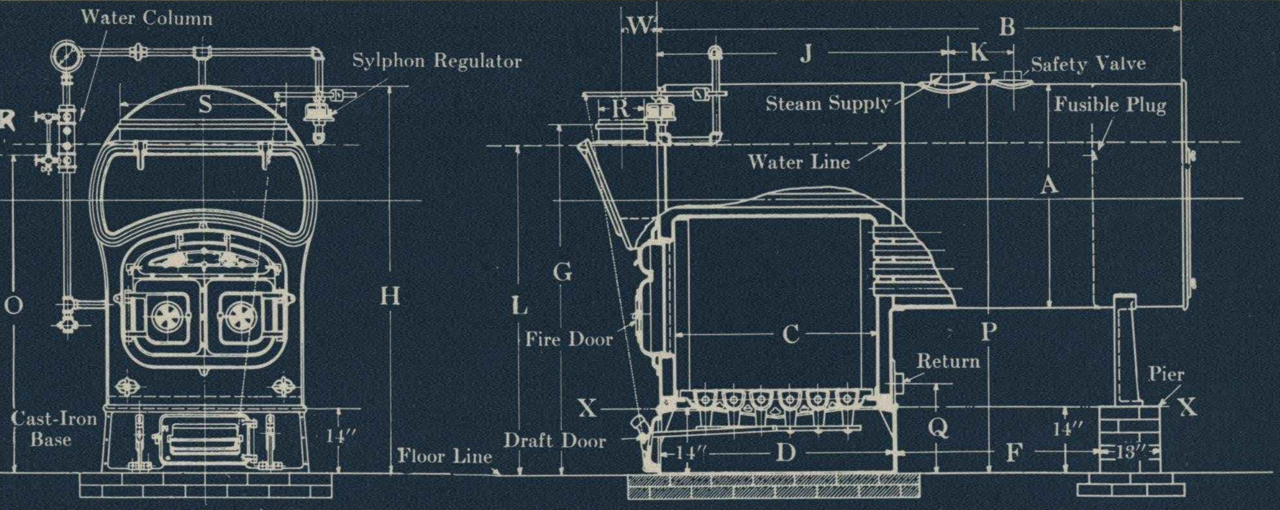
600 U. S. Government-owned postoffice buildings are heated with Kewanee Boilers.

KEWANEE FIREBOX BOILER

Portable Up-Draft Type

Numbers 407 to 409 with cast-iron base

Section showing setting.



Dimension "O" to be 3″ Greater on Boilers over 15 lbs. Working Pressure

Front Elevation

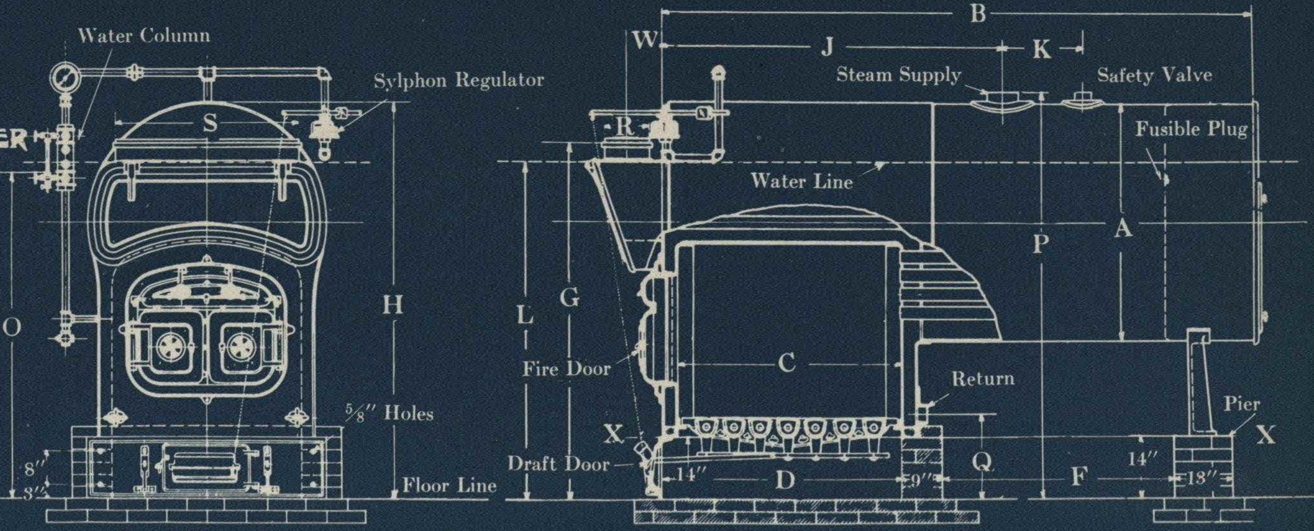
Longitudinal Section

KEWANEE FIREBOX BOILER

Portable Up-Draft Type

Numbers 410 to 414 with brick base

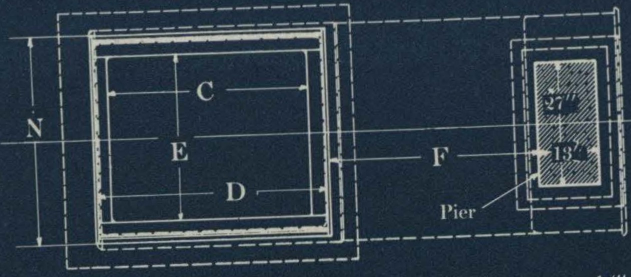
Section showing setting and foundation.



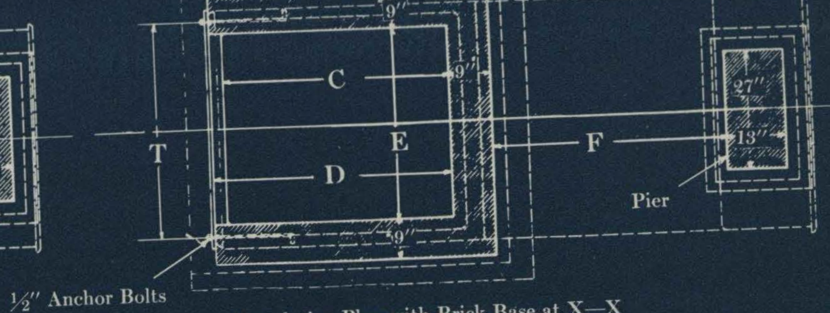
Dimension "O" to be 3″ Greater on Boilers over 15 lbs. Working Pressure

Front Elevation

Longitudinal Section



Foundation Plan with Cast-Iron Ash Pit at X—X

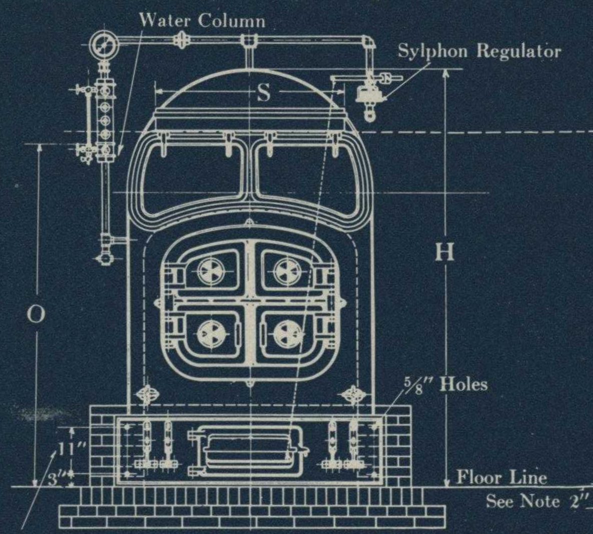


Foundation Plan with Brick Base at X—X

KEWANEE FIREBOX BOILER Setting Measurements —Portable Type

Number of Boiler		407	408	409	410	411	412	413	414
A—Diameter of Boiler	in.	48	48	48	54	54	54	60	60
B—Length of Boiler	ft. in.	8-7	9-6	11-1	10-0	11-1	12-1	12-5	13-7
C—Length of Fire-box	in.	38	44	50	44	50	56	56	62
D—Length of Ash-pit	in.	45	51	57	47	53	59	59	65
E—Width of Ash-pit	in.	36	36	36	43	43	43	49	49
F—Ash-pit Base to Pier	ft. in.	3-3	3-8	4-9	3-9	4-4	4-10	5-2	5-10
G—Height of Breeching Connection	in.	76	76	76	80	80	80	88	88
H—Height of Boiler	in.	84	84	84	89	89	89	98	98
J—Location of Steam Supply	ft. in.	4-8	5-3	6-3	5-6	6-4	8-0	8-3	8-8
K—Location of Safety Valve	in.	13	14	18	16	18	13	16	18
L—Height of Water Line	in.	71	71	71	76	76	76	83	83
N—Width of Ash-pit Base	in.	46	46	46					
O—Height of Water Column	in.	69½	69½	69½	73½	73½	73½	81	81
P—Height of Steam Supply	in.	85	85	85	90	90	90	99	99
Q—Height of Return	in.	19	19	19	19	19	19	20	20
R—Width of Breeching Connection	in.	10	10	10	10	10	10	12½	12½
S—Length of Breeching Connection	in.	36	36	36	42	42	42	46	46
T—Center to Center Bolts in Ash-pit Front	in.				48	48	48	54	54
W—Boiler to Center of Breeching	in.	8	8	8	8	8	8	9¼	9¼
Size of Steam Supply	in.	6	6	6	6	6	6	8	8
Size of Return	in.	4	4	4	4	4	4	5	5
Size of Safety Valve	in.	2	2	2	2	2½	2½	2½	3
*Number of Common Brick		70	70	70	450	480	510	530	560
Outside Surface to Cover	sq. ft.	115	130	150	155	175	185	190	220

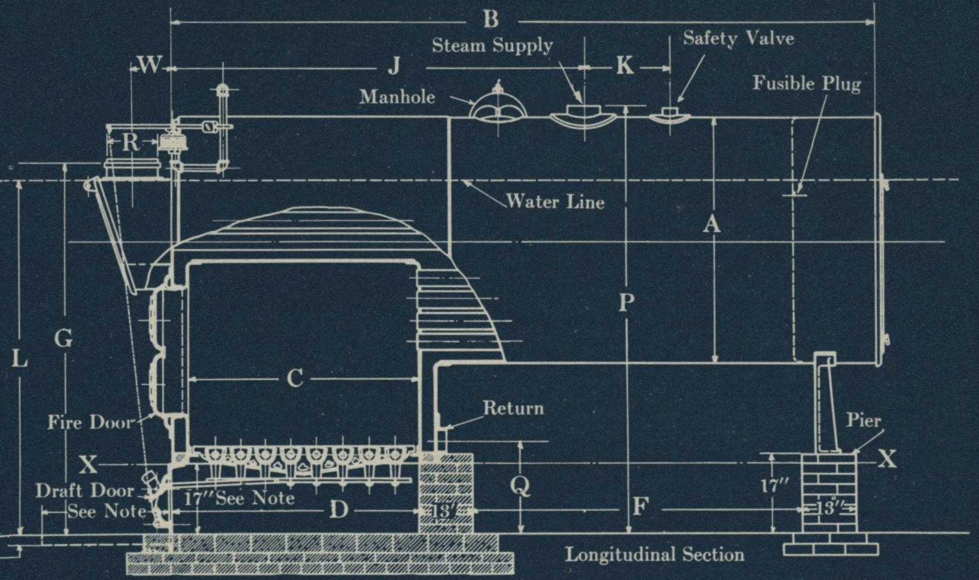
*Foundations not included. For larger sizes see next two pages.



15" on Nos. 423 and 424

Front Elevation

Dimension "O" to be 3" Greater on Boilers over 15 lbs. Working Pressure



Longitudinal Section

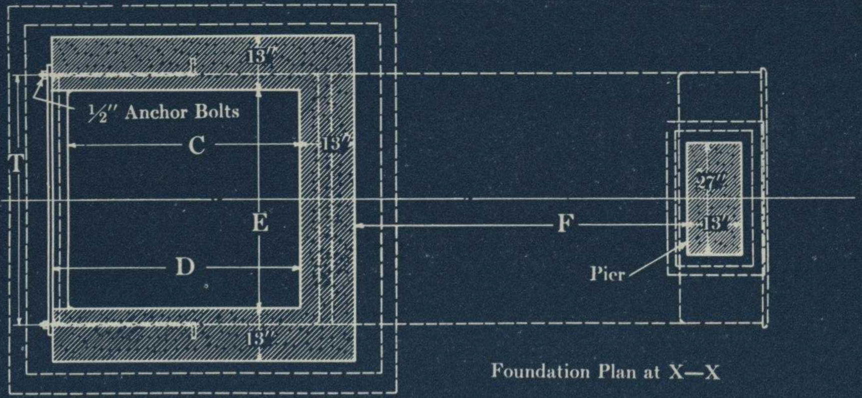
On Nos. 423 and 424 Ash-pit is 21" high. Drop Ash-pit Front 4" below floor level and make depression in floor 2" deep, 24" long and 55" wide to allow doors to swing

KEWANEE FIREBOX BOILER

Portable Up-Draft Type

Number 415 and larger with brick base

Section showing setting plan and foundation.

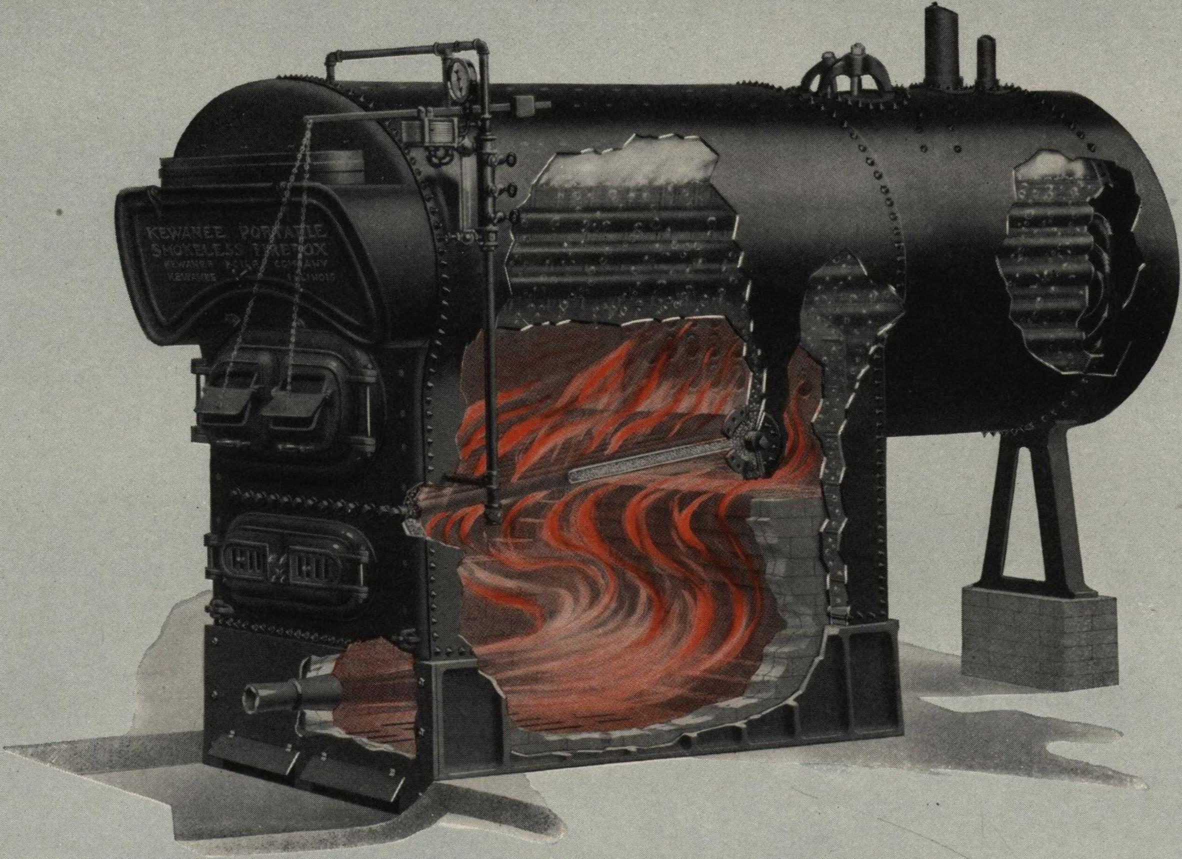


Foundation Plan at X—X

KEWANEE FIREBOX BOILER Setting and Foundation Measurements—Portable Type—*Cont.*

Number of Boiler		415	416	417	418	419	420	421	422	423	424
A—Diameter of Boiler	in.	60	60	66	66	72	72	78	78	84	84
B—Length of Boiler	ft. in.	14-4	16-2	15-9	17-4	15-11	17-6	17-11	19-11	20-1	22-1
C—Length of Fire-box	in.	56	62	62	68	68	74	74	80	80	86
D—Length of Ash-pit	in.	60	66	66	72	72	78	78	84	84	90
E—Width of Ash-pit	in.	53	53	59	59	65	65	71	71	77	77
F—Ashpit Wall to Pier	ft. in.	6-7	7-11	7-5	8-5	6-11	7-11	8-4	9-10	9-10	11-4
G—Height of Breeching Connection	in.	90	90	93	93	100	100	101	101	109	109
H—Height of Boiler	in.	101	101	107	107	113	113	115	115	121	121
J—Location of Steam Supply	ft. in.	8-5	9-5	9-4	10-2	9-8	11-1	11-3	12-0	12-6	12-6
K—Location of Safety Valve	in.	21	29	18	32	18	26	24	30	24	21
L—Height of Water-line	in.	87	87	90	90	96	96	97	97	105	105
O—Height of Water Column	in.	84	84	87½	87½	93½	93½	94	94	102½	102½
P—Height of Steam Supply	in.	103	103	109	109	115	115	117	117	123	123
Q—Height of Return	in.	23	23	23	23	23	23	23	23	23	23
R—Width of Breeching Connection	in.	12½	12½	15	15	17	17	17	17	20	20
S—Length of Breeching Connection	in.	46	46	50	50	54	54	60	60	64	64
T—Ctr. to Ctr. Bolts in Ash-pit Front	in.	60	60	66	66	72	72	78	78	84	84
W—Boiler to Center of Breeching	in.	9¼	9¼	10½	10½	11½	11½	11½	11½	13	13
Size of Steam Supply	in.	8	8	8	8	8	8	8	8	10	10
Size of Return	in.	5	5	6	6	6	6	6	6	6	6
Size of Safety Valve	in.	3	3	3½	3½	4	4	2-2½	2-3	2-3	2-3
*Number of Common Brick		680	710	740	760	790	820	840	885	900	935
Outside Surface to Cover	sq. ft.	250	280	290	310	315	345	385	425	455	505

*Foundation not included. For smaller sizes see previous two pages.



KEWANEE DOWN-DRAFT BOILER
For Burning Oil

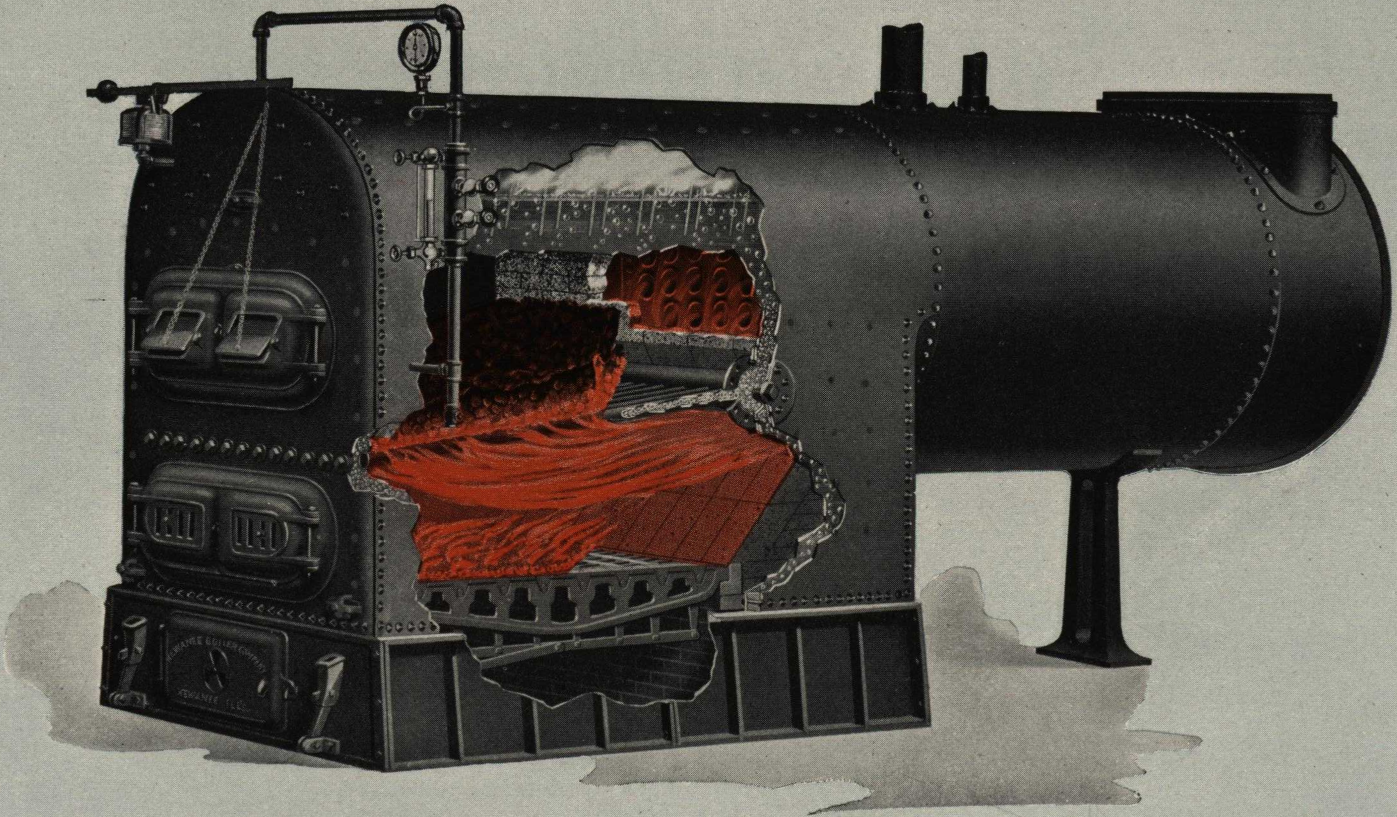
KEWANEE *Firebox Boilers for Burning Oil*

HOT flames, as they blaze from the nozzles of commercially successful oil burners give out an intense heat which is highly localized inside the refractory lining of the furnace. For this reason an oil-burning boiler must be constructed as strongly as the KEWANEE is built—of rolled steel plates with firmly riveted seams which have no locked up stresses—if the boiler is to stand up for long under the rigorous stress of such heating and alternate cooling.

The down-draft type boiler with water grate built-in-at-the-factory is particularly well adapted to give the highest efficiency when burning oil. The grate header, located at the hottest zone of the fire-box, acts like a pump driving water along at high speed, sweeping steam bubbles away from the heating surface, keeping the large water content in active circulation and thus maintaining the most favorable condition for effective transfer of the heat of combustion to make steam.

On account of the consistent heat-giving quality of an oil fire, it is customary for manufacturers to list boilers used for burning oil at higher capacities than the same boilers are rated when used for burning coal.

We suggest that you write us for specifications

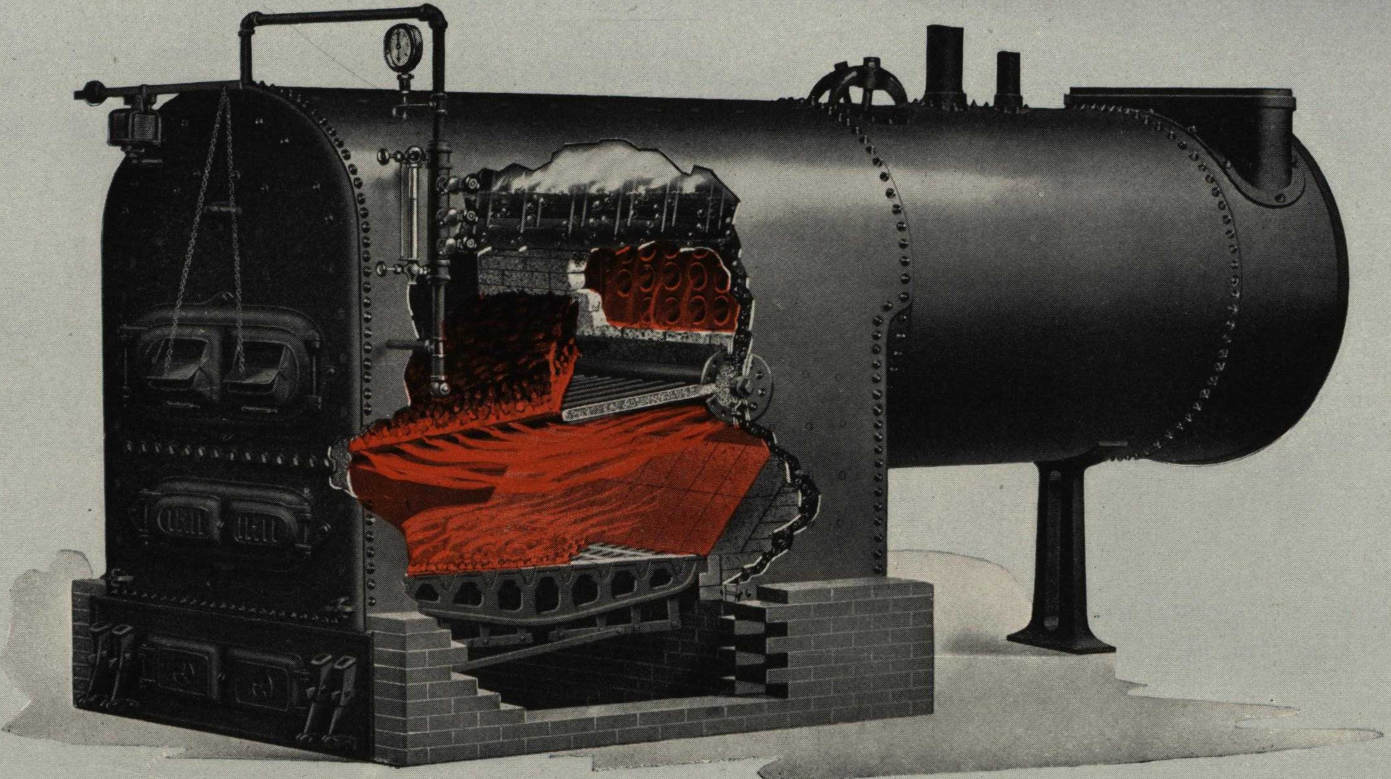


KEWANEE SMOKELESS BOILER

Portable Down-Draft Type K

Numbers 104K to 112K
For heating 1500 to 5200 sq. ft. radiation

FOR smaller size buildings. Burns any fuel smokelessly. Easy to clean flues from rear. Asbestos covered. No brick setting. Stack outlet at rear. Iron ash-pit and backstand.



KEWANEE SMOKELESS BOILER

Portable Down-Draft Type K

Numbers 113K to 120K
For heating 6200 to 15,200 sq. ft. radiation

FOR average size buildings. Burns any fuel smokelessly. Easy to clean flues from rear. Asbestos covered. No brick setting. Stack outlet at rear. Brick base.

KEWANEE SMOKELESS BOILER Specifications — Type K

These Boilers will heat all the radiation shown by their capacity

Built much stronger than the A. S. M. E. Boiler Code requires

Number of Boiler		104K	105K	106K	107K	108K	109K	110K	111K	112K	113K	114K	115K	116K	117K	118K	119K	120K
Code, Steam Boiler		Habit	Hack	Hades	Hail	Hair	Hale	Half	Hall	Halo	Halt	Ham	Hand	Hank	Hapy	Hard	Hash	Hate
Code, Water Boiler		Hobo	Hock	Hod	Hoe	Hog	Hold	Hole	Holy	Home	Honey	Honor	Hood	Hope	Horde	Horn	Host	Hour
Capacity, Steam	sq. ft.	1500	1900	2200	2500	2900	3400	3800	4400	5200	6200	7100	8100	9500	10900	12300	13300	15200
Capacity, Water	sq. ft.	2450	3100	3600	4100	4800	5600	6300	7400	8600	10100	11800	13300	15700	18000	20400	21900	25000
Heating Surface	sq. ft.	157	185	220	234	271	308	338	381	425	500	590	677	787	879	987	1090	1230
Area of Upper Grate	sq. ft.	5.9	7.2	8.4	8.6	10.1	11.4	11.8	13.2	15.0	17.1	19.1	21.1	23.3	23.5	25.9	28.5	31.3
Diameter of Boiler	in.	36	36	36	42	42	42	48	48	48	54	54	60	60	66	66	72	72
Length Boiler Over-all	ft. in.	9–11	11–5	12–11	11–2	12–8	14–2	13–8	15–2	16–8	17–1	19–7	19–4	21–10	19–10	21–10	19–10	21–10
Approx. Weight, Pounds		5000	5600	6100	6900	7500	8100	9200	9900	10600	12600	14000	16500	18100	20500	22200	24000	26000

Kewanee Portable Type K Boilers are constructed in exactly the same manner as the larger Kewanee Fire-box Boilers and will heat all the direct cast-iron radiation or equivalent, shown by their capacity, in addition to mains and risers.

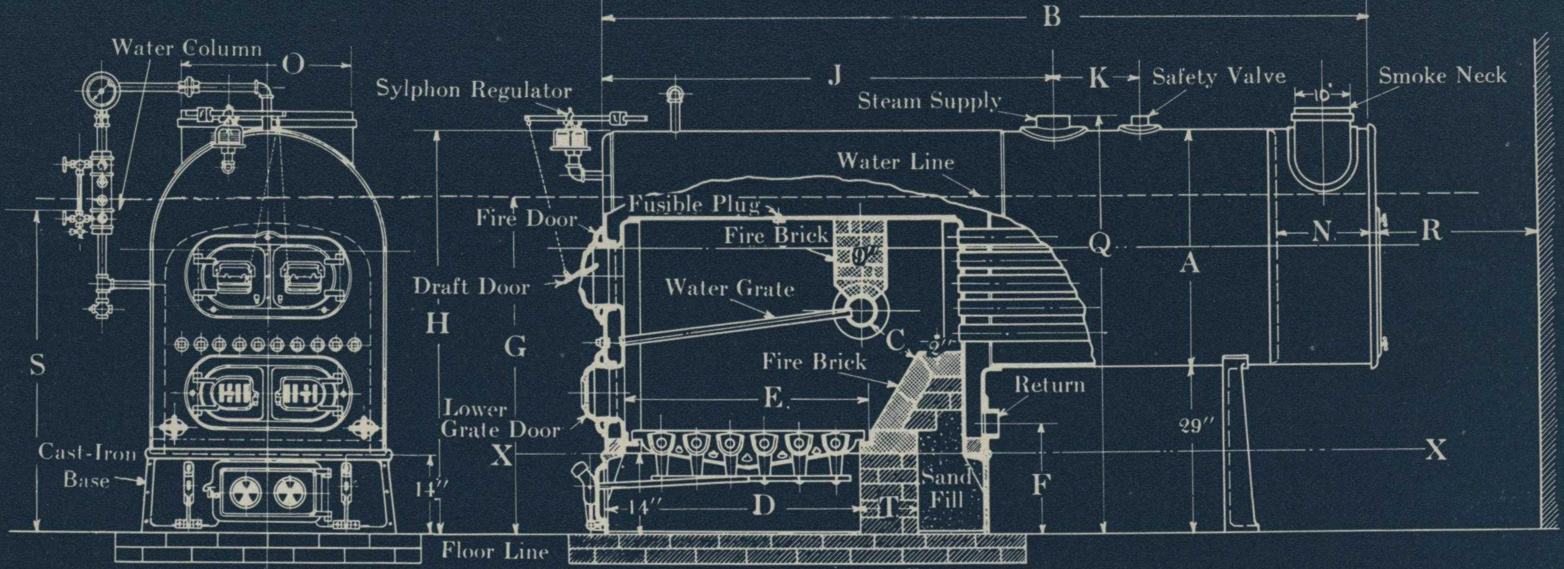
KEWANEE SMOKELESS BOILER Specifications—Type K—*Cont.*

Built much stronger than the A. S. M. E. Boiler Code requires

Number of Boiler		104K	105K	106K	107K	108K	109K	110K	111K	112K	113K	114K	115K	116K	117K	118K	119K	120K
Width of Fire-box	in.	30	30	30	36	36	36	42	42	42	48	48	53	53	59	59	65	65
Length of Fire-box	in.	45	51	57	54	60	66	66	72	78	78	84	90	96	90	96	96	102
Diam. of Breeching	in.	20	20	22	22	22	24	24	27	27	30	30	34	34	36	36	38	38
Diam. of Stack	in.	18	18	20	20	20	22	22	24	24	28	28	32	32	34	34	36	36
Minimum Height of Stack	ft.	40	40	40	45	45	45	45	50	50	55	55	55	55	65	65	65	65
Diameter of Breeching, Two Boilers	in.	26	26	28	28	30	32	32	34	34	36	38	42	42	44	45	48	50
Diam. of Stack, Two Boilers	in.	24	24	26	26	28	30	30	32	32	34	36	38	38	40	42	44	46
Minimum Height of Stack, Two Boilers	ft.	50	50	50	55	55	55	55	55	55	65	65	65	70	70	75	75	75
Size of Steam Opening	in.	5	6	6	6	6	6	6	6	8	8	8	8	8	8	8	8	8
Size of Return	in.	3	3	3	4	4	4	4	4	5	5	5	5	5	6	6	6	6
Size of Safety Valve	in.	1½	1½	2	2	2	2	2	2½	2½	3	3	3	3½	3½	4	4	Two 2½
Height of Water-line	in.	55	55	55	58½	58½	58½	61	61	61	66	66	75	75	80	80	85½	85½
Height from Floor to Top of Boiler	in.	65	65	65	71	71	71	77	77	77	83	83	93	93	99	99	105	105

For setting and measurements see pages 40 to 43.

Every Kewanee Type K Boiler is built of steel plates, riveted.



Front Elevation

Dimension "S" to be 2" Greater on Boilers over 15 lbs. Working Pressure

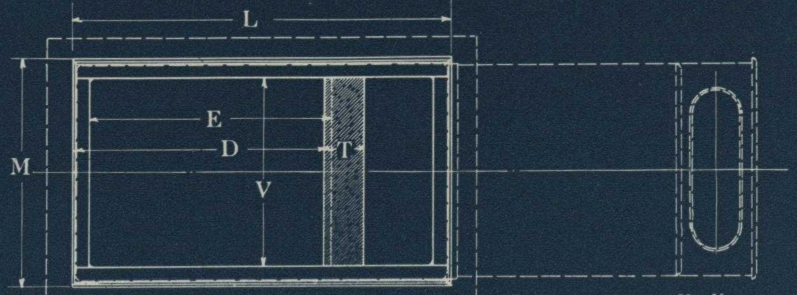
Longitudinal Section

KEWANEE SMOKELESS BOILER

Portable Down-Draft Type K

Numbers 104K to 112K with cast-iron base and backstand

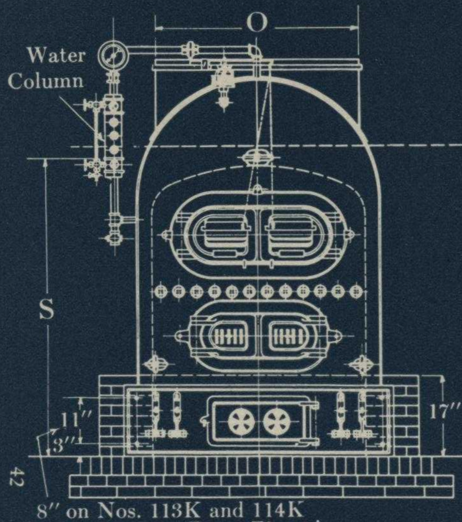
Section showing setting and foundation.



Foundation Plan at X—X

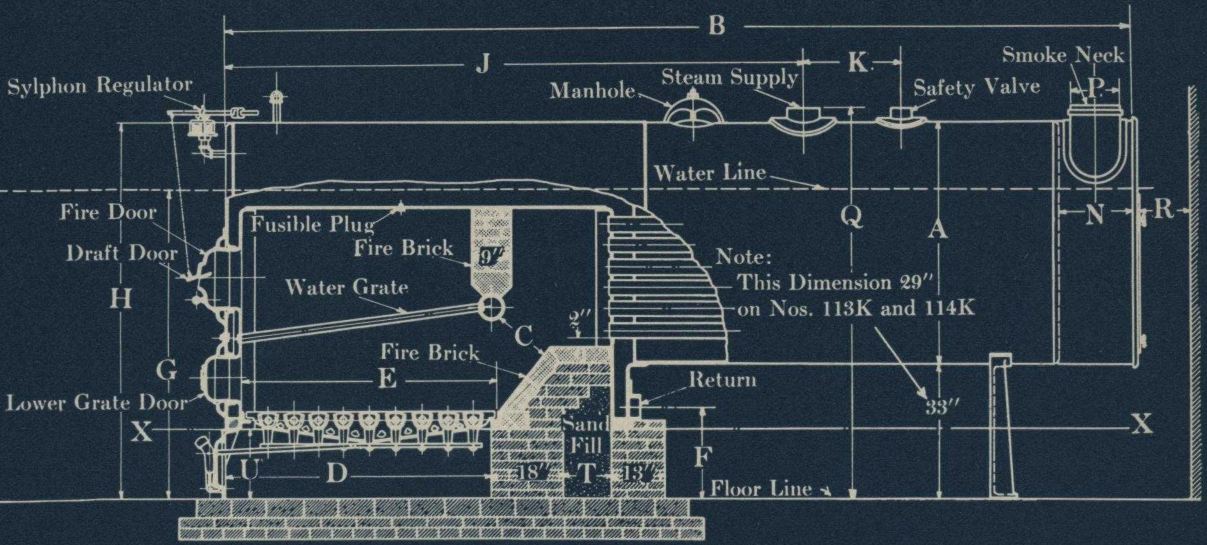
KEWANEE SMOKELESS BOILER Setting Measurements—Type K—Cast-Iron Base

Number of Boiler		104K	105K	106K	107K	108K	109K	110K	111K	112K
A—Diameter of Boiler	in.	36	36	36	42	42	42	48	48	48
B—Length of Boiler	ft. in.	9-11	11-5	12-11	11-2	12-8	14-2	13-8	15-2	16-8
C—Header to Bridge Wall	in.	7	8	9	9	10	12	10	11	12½
D—Length of Ash-pit	in.	32	38	44	38	44	50	44	50	56
E—Length of Grate	in.	31	37	43	37	43	49	43	49	55
F—Height of Return	in.	19	19	19	19	19	19	19	19	20
G—Height of Water-line	in.	55	55	55	58½	58½	58½	61	61	61
H—Height of Boiler	in.	65	65	65	71	71	71	77	77	77
J—Location of Steam Supply	ft. in.	6-0	7-0	8-0	7-6	8-0	8-9	8-10	9-8	10-4
K—Location of Safety Valve	in.	15	18	18	13	12	13	16	18	18
L—Length of Ash-pit Base	in.	51	57	63	60	66	72	72	78	84
M—Width of Ash-pit Base	in.	40	40	40	46	46	46	54	54	54
N—Depth of Smoke-box	in.	16	16	16	16	16	16	16	16	16
O—Length of Breeching Connection	in.	24	24	24	30	30	30	36	36	36
Q—Height of Steam Supply	in.	67	67	67	73	73	73	79	79	79
R—Minimum Space Required at Rear	in.	21	21	21	24	24	24	27	27	27
S—Height of Water Column	in.	53½	53½	53½	57	57	57	59½	59½	59½
T—Thickness of Bridge Wall	in.	9	9	9	9	9	9	13	13	13
V—Width of Ash-pit	in.	31	31	31	37	37	37	43	43	43
Size of Steam Supply	in.	5	6	6	6	6	6	6	6	8
Size of Safety Valve	in.	1½	1½	2	2	2	2	2	2½	2½
Size of Return	in.	3	3	3	4	4	4	4	4	5
Number of Fire Brick		85	85	85	115	115	115	155	155	155
Outside Surface to be Covered	sq. ft.	93	102	115	131	148	164	180	199	218



Front Elevation

Dimension "S" 2″ Greater for Boilers over 15 lbs. Working Pressure



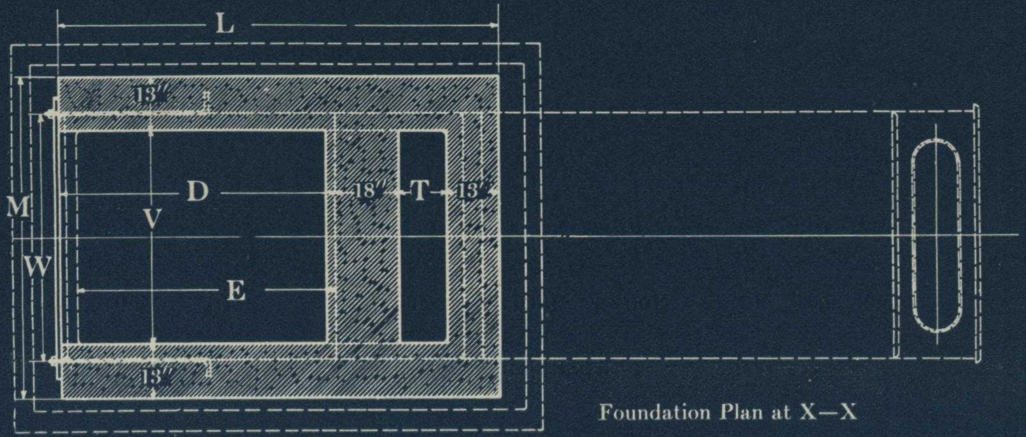
Longitudinal Section

KEWANEE SMOKELESS BOILER

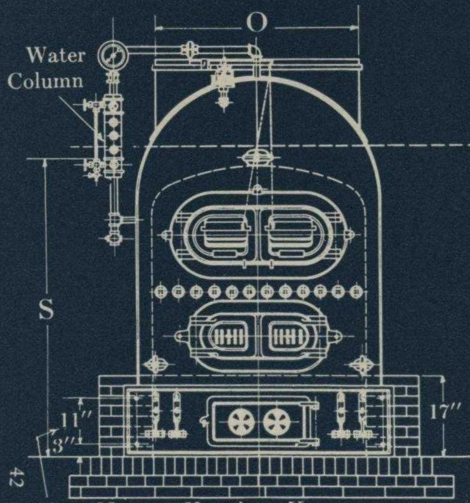
Portable Down-Draft Type K

Numbers 113K to 120K with brick base and cast-iron backstand

Section showing setting and foundation.



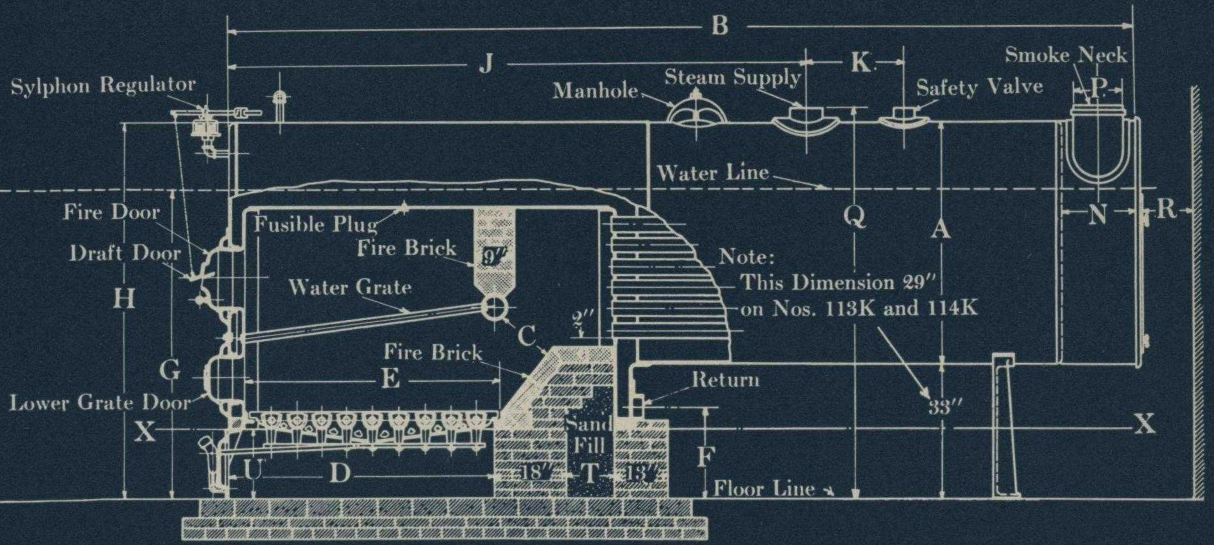
Foundation Plan at X—X



8″ on Nos. 113K and 114K

Front Elevation

Dimension "S" 2″ Greater for Boilers over 15 lbs. Working Pressure



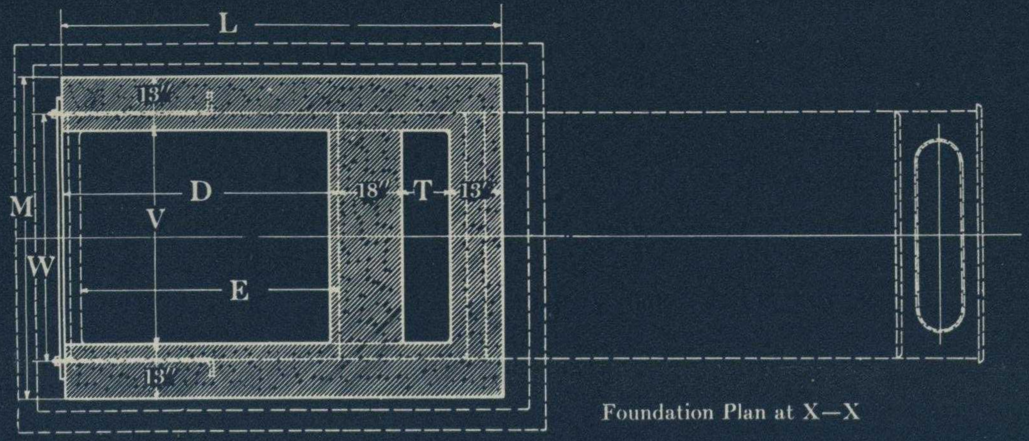
Longitudinal Section

KEWANEE SMOKELESS BOILER

Portable Down-Draft Type K

Numbers 113K to 120K with brick base and cast-iron backstand

Section showing setting and foundation.



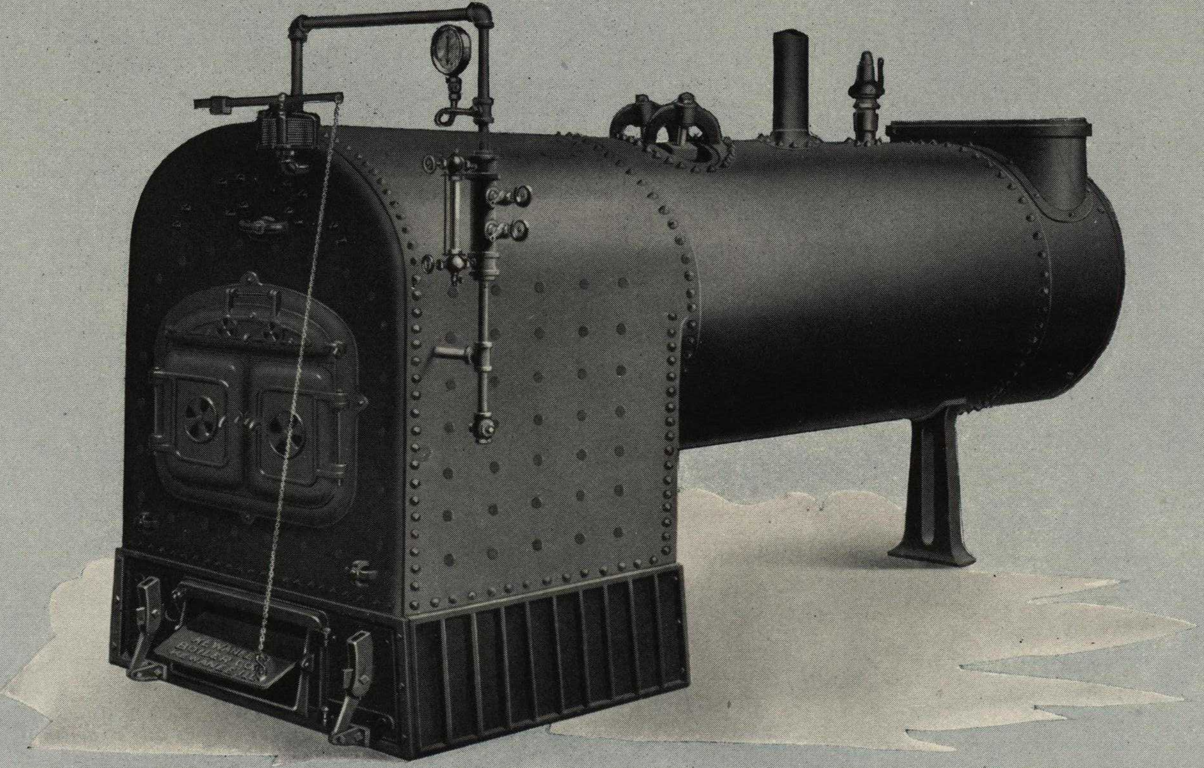
Foundation Plan at X—X

Erratum

Page 43. Quantities of Common Brick given do not include Foundation.

KEWANEE SMOKELESS BOILER Setting Measurements—Type K—Brick Base

Number of Boiler		113K	114K	115K	116K	117K	118K	119K	120K
A—Diameter of Boiler	in.	54	54	60	60	66	66	72	72
B—Length of Boiler	ft. in.	17-1	19-7	19-4	21-10	19-10	21-10	19-10	21-10
C—Header to Bridge Wall	in.	13	14	14	15½	14	15½	16	17
D—Length of Ash-pit	in.	57	63	63	69	63	69	69	75
E—Length of Grate	in.	55	61	61	67	61	67	67	73
F—Height of Return	in.	20	20	23	23	23	23	23	23
G—Height of Water-line	in.	66	66	75	75	80	80	85½	85½
H—Height of Boiler	in.	83	83	93	93	99	99	105	105
J—Location of Steam Supply	ft. in.	11-0	11-6	11-10	13-0	12-0	13-0	12-1	13-1
K—Location of Safety Valve	in.	21	30	26	30	30	30	20	34
L—Length of Foundation	in.	94	100	106	112	106	112	112	118
M—Width of Foundation	in.	75	75	80	80	86	86	92	92
N—Depth of Smoke-box	in.	16	16	18	18	18	18	18	18
O—Length of Breeching Connection	in.	46	46	50	50	54	54	68	68
P—Width of Breeching Connection	in.	10	10	12	12	12	12	13	13
Q—Height of Steam Supply	in.	85	85	95	95	101	101	107	107
R—Minimum Space Required at Rear	in.	30	30	33	33	36	36	39	39
S—Height of Water Column	in.	64½	64½	72½	72½	77½	77½	83	83
T—Bridge Wall to Rear Wall	in.	6	6	12	12	12	12	12	12
U—Height of Ash-pit	in.	14	14	17	17	17	17	17	17
V—Width of Ash-pit	in.	49	49	54	54	60	60	66	66
W—Center to Center Bolts in Ash-pit Front	in.	54	54	60	60	66	66	72	72
Size of Steam Supply	in.	8	8	8	8	8	8	8	8
Size of Safety Valve	in.	3	3	3	3½	3½	4	4	Two 2½
Size of Return	in.	5	5	5	5	6	6	6	6
Number of Common Brick		955	980	1300	1350	1300	1350	1375	1450
Number of Fire Brick		195	195	210	215	240	240	255	255
Outside Surface to be Covered	sq. ft.	243	278	311	350	350	384	380	407

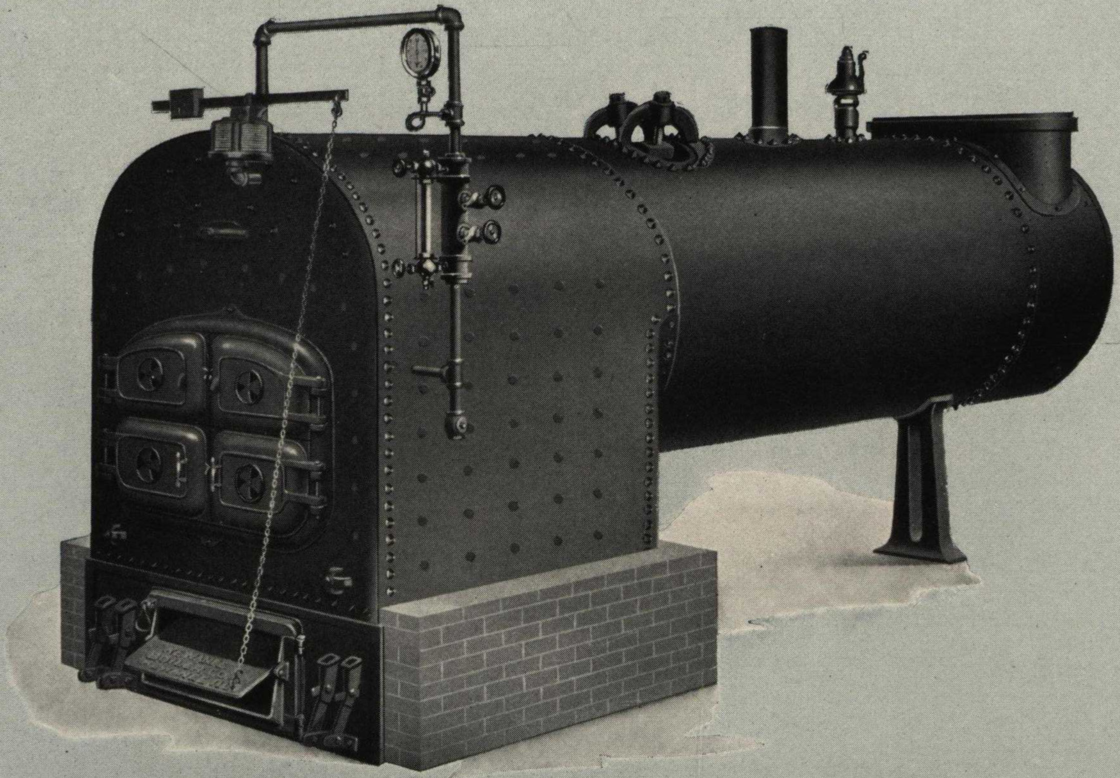


KEWANEE FIREBOX BOILER

Portable Up-Draft Type K

Numbers 0K to 12K
For heating 600 to 4300 sq. ft. radiation

FOR smaller size buildings. Burns any fuel without skilled attention. Easy to clean flues from front or rear. Asbestos covered. No brick setting. Stack outlet at rear. Iron ash-pit and backstand.



KEWANEE FIREBOX BOILER

Portable Up-Draft Type K

Numbers 13K to 20K
For heating 5200 to 13,300 sq. ft. radiation

FOR average size buildings. Burns any fuel without skilled attention. Easy to clean flues from front or rear. Stack outlet at rear. Brick base.

KEWANEE FIREBOX BOILER Specifications Type K—Up-Draft

These Boilers will heat all the radiation shown by their capacity

Built much stronger than the A. S. M. E. Boiler Code requires

Number of Boiler . .	0K	1K	2K	3K	4K	5K	6K	8K	9K	10K	11K	12K	13K	14K	15K	16K	17K	18K	19K	20K
Code, Steam Boiler .	Date	Dort	Dote	Dock	Doer	Dog	Doge	Doit	Dole	Doll	Dolly	Dolar	Dome	Doze	Doon	Door	Dope	Dost	Dove	Down
Code, Water Boiler .	Deny	Drug	Drum	Drag	Dragon	Drain	Drake	Dram	Drank	Drape	Draw	Dray	Dream	Drear	Dress	Droll	Drip	Drive	Drone	Drop
Capacity, Steam sq. ft.	600	850	1000	1150	1300	1600	1900	2450	2850	3300	3800	4300	5200	6200	7100	8200	9500	10400	11400	13300
Capacity, Water sq. ft.	1000	1400	1600	1900	2200	2600	3100	4100	4700	5500	6300	7000	8600	10100	11800	13700	15700	17300	18800	21900
Heating Surface sq. ft.	61	83	93	104	139	164	190	241	275	298	338	378	447	537	603	708	791	896	992	1129
Area of Grate. sq. ft.	3.5	4.4	5.4	6.4	6.8	8.0	9.3	11.1	12.6	12.9	14.7	16.5	18.8	20.8	22.9	25.1	25.5	28.0	30.8	33.5
Diam. of Boiler . . in.	24	30	30	30	36	36	36	42	42	48	48	48	54	54	60	60	66	66	72	72
Length of Boiler Over-all . . . ft. in.	7–9	7–10	8–10	9–10	8–10	10–4	11–10	11–4	12–10	11–10	13–4	14–10	15–4	17–10	17–0	19–6	17–6	19–6	17–6	19–6
Approx. Weight, Lbs.	2400	2900	3200	3500	3900	4400	4900	6300	6900	7600	8300	9000	11100	12400	15000	16600	17900	19200	21900	23700

Kewanee Type K Portable Boilers heat efficiently the smallest buildings in which a steel boiler may be used.

KEWANEE FIREBOX BOILER Specifications Type K—Up-Draft—*Cont.*

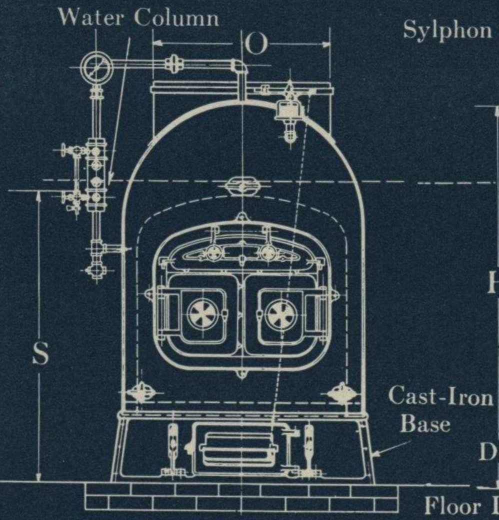
Built much stronger than the A. S. M. E. Boiler Code requires

Number of Boiler		0K	1K	2K	3K	4K	5K	6K	8K	9K	10K	11K	12K	13K	14K	15K	16K	17K	18K	19K	20K
Width of Fire-box	in.	19	24	24	24	30	30	30	36	36	42	42	42	48	48	53	53	59	59	65	65
Length of Fire-box	in.	26	26	32	38	32	38	44	44	50	44	50	56	56	62	62	68	62	68	68	74
Height of Fire-box	in.	30	35	35	35	38	38	38	41	41	44	44	44	49	49	54	54	59	59	64	64
Diameter of Breeching	in.	10	12	14	16	16	18	18	20	22	22	24	24	28	28	32	32	32	32	36	36
Diameter of Stack	in.	10	12	12	14	14	16	16	18	20	20	22	22	26	26	30	30	30	30	34	34
Minimum Height of Stack	ft.	35	35	35	35	35	35	40	40	40	40	45	45	45	45	50	50	55	55	55	55
Diam. of Breeching, Two Boilers	in.	16	18	20	22	22	24	24	28	32	32	32	34	36	36	40	40	40	42	44	46
Diam. of Stack, Two Boilers	in.	16	18	18	20	20	22	22	26	28	28	30	32	34	34	36	36	36	38	40	42
Minimum Height of Stack, Two Boilers	ft.	40	40	40	40	40	40	40	45	45	45	45	45	50	55	55	65	65	65	65	65
Size of Steam Opening	in.	3	4	4	5	5	6	6	6	6	6	6	8	8	8	8	8	8	8	8	8
Size of Return	in.	2	2½	2½	3	3	3	3	4	4	4	4	5	5	5	5	5	6	6	6	6
Size of Safety Valve	in.	1	1¼	1¼	1¼	1½	1½	2	2	2	2	2½	2½	2½	3	3	3½	3½	3½	4	4
Height of Water-line	in.	45	52	52	52	55	55	55	58½	58½	61	61	61	66	66	75	75	80	80	85½	85½
Hgt. from Floor to Top of Boiler	in.	51	59	59	59	65	65	65	71	71	77	77	77	83	83	93	93	99	99	105	105

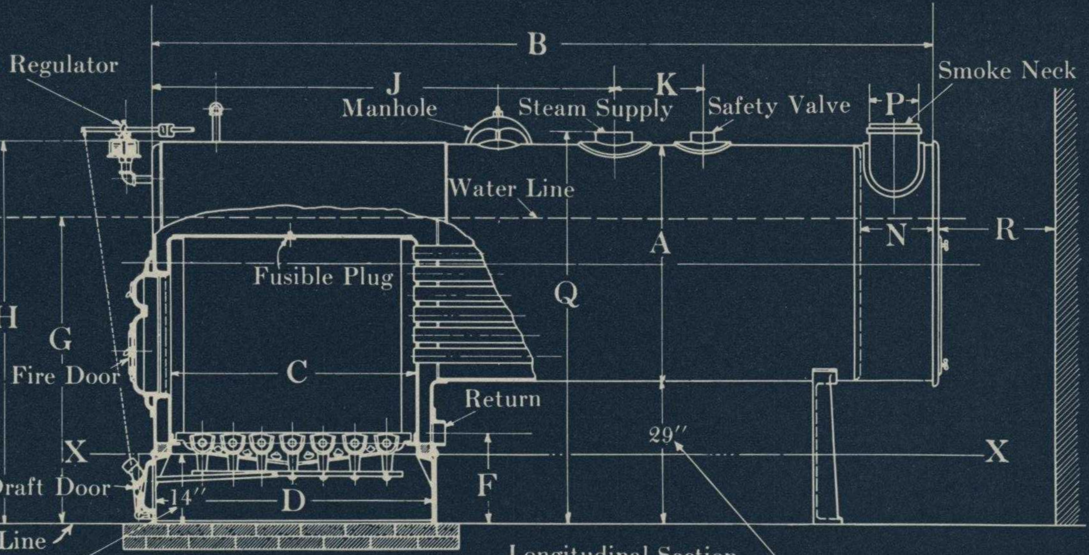
For setting plans and measurements see pages 48 to 51.

Kewanee Steel Fire-box Boilers are recognized in all parts of this country and Canada as the most dependable heating boilers.

Many of the first Kewanee Boilers made are still on the job—nearly 40 years old.



Front Elevation



This Dimension 12″ on No. 0-K

Longitudinal Section

This Dimension 27″ on No. 0-K

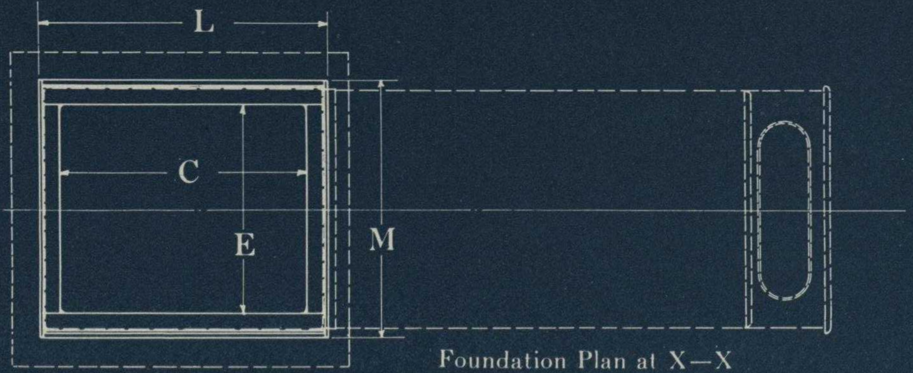
Dimension "S" to be 2″ Greater
on Boilers over 15 lbs. Working Pressure

KEWANEE FIREBOX BOILER

Portable Up-Draft Type

Numbers 0K to 12K with cast-iron base
and backstand

Section showing setting and
foundation.

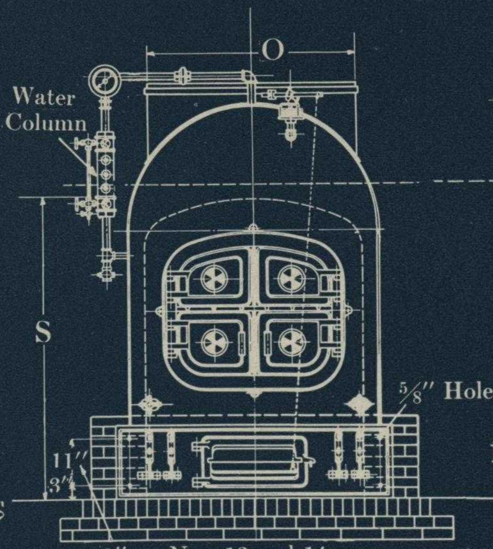


Foundation Plan at X—X

KEWANEE FIREBOX BOILER Setting Measurements—Type K—Up-Draft—Cast-Iron Base

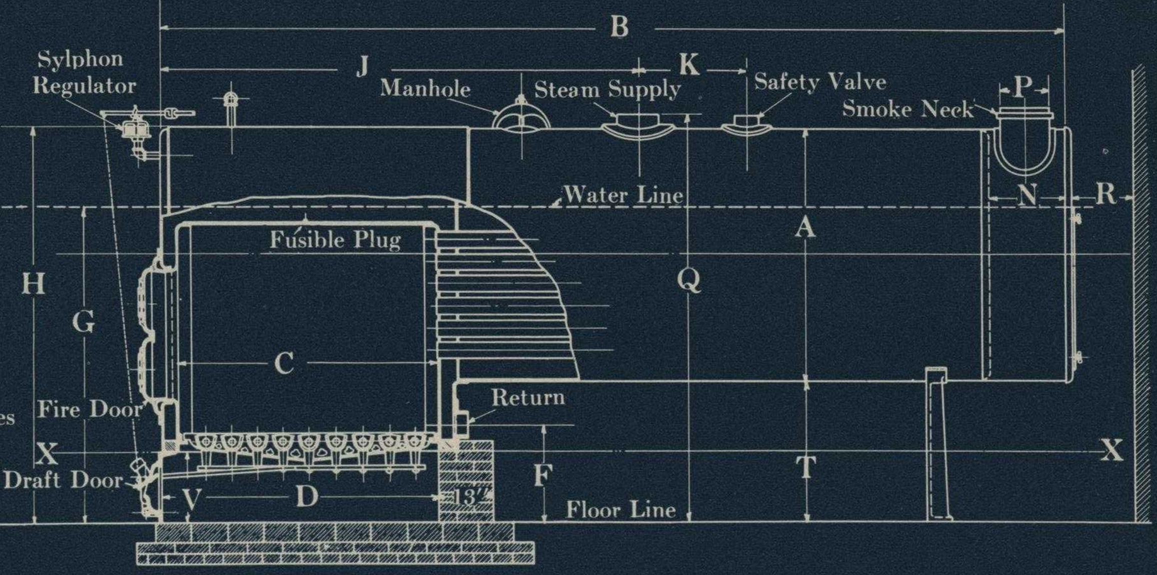
Number of Boiler		0K	1K	2K	3K	4K	5K	6K	8K	9K	10K	11K	12K
A—Diameter of Boiler	in.	24	30	30	30	36	36	36	42	42	48	48	48
B—Length of Boiler	ft. in.	7-9	7-10	8-10	9-10	8-10	10-4	11-10	11-4	12-10	11-10	13-4	14-10
C—Length of Fire-box	in.	26	26	32	38	32	38	44	44	50	44	50	56
D—Length of Ash-pit	in.	31	33	39	45	39	45	51	51	57	51	57	63
E—Width of Ash-pit	in.	19	24	24	24	30	30	30	36	36	42	42	42
F—Height of Return	in.	15½	18	18	19	19	19	19	19	19	19	19	20
G—Height of Water-line	in.	45	52	52	52	55	55	55	58½	58½	61	61	61
H—Height of Boiler	in.	51	59	59	59	65	65	65	71	71	77	77	77
J—Location of Steam Supply	ft. in.	4-0	4-0	4-8	5-6	4-11	5-11	6-11	6-8	7-2	7-0	7-10	8-6
K—Location of Safety Valve	in.	12	12	15	16	15	18	18	13	13	16	18	18
L—Length of Ash-pit Base	in.	32	34	40	46	40	46	52	52	58	52	58	64
M—Width of Ash-pit Base	in.	27	34	34	34	40	40	40	46	46	52	52	52
N—Depth of Rear Smoke-box	in.	12	16	16	16	16	16	16	16	16	16	16	16
O—Length of Breeching Connection		10 in. diam.	16	16	16	24	24	24	30	30	36	36	36
P—Width of Breeching Connection			8	8	8	10	10	10	10	10	10	10	10
Q—Height of Steam Supply	in.	53	61	61	61	67	67	67	73	73	79	79	79
R—Minimum Space Required at Rear	in.	24	18	18	18	21	21	21	24	24	27	27	27
S—Height of Water Column	in.	43	50½	50½	50½	53½	53½	53½	57	57	59½	59½	59½
Size of Steam Supply	in.	3	4	4	5	5	6	6	6	6	6	6	8
Size of Safety Valve	in.	1	1¼	1¼	1¼	1½	1½	2	2	2	2	2½	2½
Size of Return	in.	2	2½	2½	3	3	3	3	4	4	4	4	5
Outside Surface to be Covered	sq. ft.	55	68	77	85	91	106	120	133	149	157	177	197

Sizes 13K to 20K are shown on pages 50 and 51.

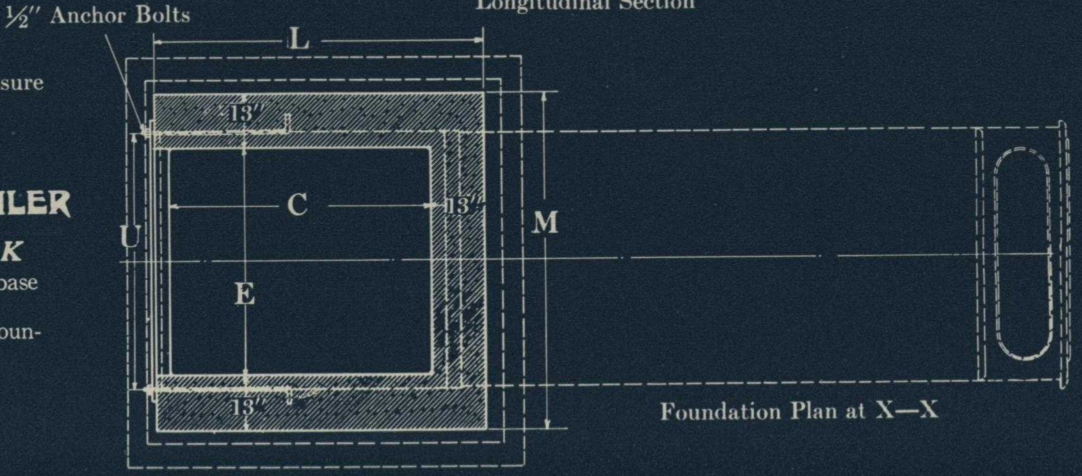


Front Elevation

Dimension "S" to be 2″ Greater on Boilers over 15 lbs. Working Pressure



Longitudinal Section



Foundation Plan at X—X

KEWANEE FIREBOX BOILER

Portable Up-Draft Type K

Numbers 13K to 20K with brick base and cast-iron backstand

Section showing setting plan and foundation.

KEWANEE FIREBOX BOILER Setting Measurements—Type K—Up-Draft—Brick Base

Number of Boiler		13K	14K	15K	16K	17K	18K	19K	20K
A—Diameter of Boiler	in.	54	54	60	60	66	66	72	72
B—Length of Boiler	ft. in.	15-4	17-10	17-0	19-6	17-6	19-6	17-6	19-6
C—Length of Fire-box	in.	56	62	62	68	62	68	68	74
D—Length of Ash-pit	in.	59	65	65	71	65	71	71	77
E—Width of Ash-pit	in.	49	49	54	54	60	60	66	66
F—Height of Return	in.	20	20	23	23	23	23	23	23
G—Height of Water-line	in.	66	66	75	75	80	80	85½	85½
H—Height of Boiler	in.	83	83	93	93	99	99	105	105
J—Location of Steam Supply	ft. in.	9-2	9-8	9-6	10-8	9-8	10-8	9-9	10-9
K—Location of Safety Valve	in.	21	30	26	30	26¾	30	20	34
L—Length of Ash-pit Base	in.	72	78	78	84	78	84	84	90
M—Width of Ash-pit Base	in.	75	75	80	80	86	86	92	92
N—Depth of Rear Smoke-box	in.	16	16	18	18	18	18	18	18
O—Length of Breeching Connection	in.	46	46	50	50	54	54	68	68
P—Width of Breeching Connection	in.	10	10	12	12	12	12	13	13
Q—Height of Steam Supply	in.	85	85	95	95	101	101	107	107
R—Minimum Space Required at Rear	in.	30	30	33	33	36	36	39	39
S—Height of Water Column	in.	64½	64½	72½	72½	77½	77½	83	83
T—Floor to Bottom of Cylinder	in.	29	29	33	33	33	33	33	33
U—Center to Center Bolts in Ash-pit Front	in.	54	54	60	60	66	66	72	72
V—Height of Ash-pit	in.	14	14	17	17	17	17	17	17
Size of Steam Supply	in.	8	8	8	8	8	8	8	8
Size of Safety Valve	in.	2½	3	3	3½	3½	3½	4	4
Size of Return	in.	5	5	5	5	6	6	6	6
Number of Common Brick		460	490	710	740	740	760	790	820
Outside Surface to be Covered	sq. ft.	200	235	275	314	311	345	338	366

Sizes 0K to 12K are shown on pages 48 and 49.

KEWANEE BOILER COMPANY

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KEWANEE, ILLINOIS

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A. I. A. File No. 30C

Open book in middle to file flat

Rogers & Company, Chicago and New York

A. I. A. File No. 30C